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Remedial Action Plan for the APS Douglas Former Manufactured Gas Plant, Douglas, Arizona ADEQ VRP Site Code 513300-00

Final

February 2020

Arizona Public Service Company

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: Douglas Former APS Manufacturing Gas Plant VRP Site Code: 513300-00

Volunteer/Applicant Name: Arizona Public Service

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Reference	Summary of Statutory Requirement (please review all statutes in their entirety to ensure compliance)	Page(s) Where Addressed in Work Plan (write N/A if not applicable)	VRP Use Only
§49-175A.1	Summary of existing site characterization and assessment information; information regarding any remediation previously conducted; copies of referenced reports not previously submitted;	Section 1.	☐
§49-175A.2	If the site has not been characterized, a plan to conduct site characterization and a schedule for completion.	Not applicable.	☐
§49-175A.3.a	If site characterization is completed, a description of how the remediation will comply with §49-175B ("Work Plans") and how the completion of remediation will be verified. A schedule for completion must be included.	Section 5, Pages 5-1 through 5-3; Section 7.2, Pages 7-3 through 7-5; Section 7.5, Pages 7-18 through 7-21; Schedule on page 7-27).	☐
§49-175A.3.b	If site characterization is completed, the work plan may provide for the remediation to be conducted in phases or tasks. A schedule for completion must be included.	Section 7.7, Page 7-27.	☐
§49-175A.4	Schedule for submission of progress reports.	Section 7.7, Page 7-27.	☐
§49-175A.5	A proposal for community involvement as prescribed by §49-176 ("Community Involvement Requirements")	Section 7.3.3, Page 7-8.	☐
§49-175A.6	If known, a list of institutional or engineering controls necessary during remediation and after completion of the proposed remediation to control exposure to contaminants.	Section 7.4.7, Pages 7-13 through 7-15.	☐
§49-175A.7	A proposal for monitoring during remediation and after the remediation if necessary to verify whether the approved remediation levels or controls have been attained and will be maintained.	Section 7.5.1 and 7.5.2, Pages 7-18 through 7-21.	☐
§49-175A.8	A list of any permits or legal requirements known to apply to the work or already performed by the applicant.	Section 7.3.2, Pages 7-5 through 7-7.	☐
§49-175A.9	If requested by the department, information regarding the financial capability of the applicant to conduct the work identified in the application. *(IF APPLICABLE)*	Section 7.1, Page 7-2.	☐

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§49-175B	Remediation levels or controls for remediation conducted pursuant to this article shall be established in accordance with rules adopted pursuant to §49-282.06 unless one or more of the following applies: see §49-175B.1 through §49-175B.4, below.	Section 7.2, Pages 7-3 through 7-5.	☐
§49-175B.1	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of contaminated soil comply with §49-152 and the rules adopted.	Section 7.2, Pages 7-3 through 7-5.	☐
§49-175B.2	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of landfills or other facilities that contain materials that are not subject to §49-152 (i.e.: asbestos) do not exceed a cumulative excess lifetime cancer risk between $1X10^{-4}$ to $1X10^{-6}$, and a hazard index of no greater than 1.	Section 7.2, Pages 7-3 through 7-5.	☐
§49-175B.3	The applicant demonstrates that on achieving remediation levels or controls for a source or potential source of contamination to a navigable water, the source of contamination will not cause or contribute to an exceedance of surface water quality standards, or if a permit is required pursuant to 33 United States Code §1342 for any discharge from the source, that any discharges from the source will comply with the permit.	Not applicable.	☐
§49-175B.4	The applicant demonstrates that, on achieving remediation levels or controls for a source of contamination to an aquifer, the source will not cause or contribute to an exceedance of aquifer water quality standards (AWQS) beyond the boundary of the facility where the source is located.	Section 5, Pages 5-1 through 5-3; Section 7.2.3.1, Pages 7-3 and 7-4.	☐
§49-175C	The VRP may waive any work plan requirement under this section that it determines to be unnecessary to make any of the determinations required under §49-177. *If any waivers are requested in the Work Plan or have been previously requested and approved by the VRP, cite them in the Work Plan, including a citation of the statute for which the waiver applies.*	Not applicable.	☐

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To support the prerequisites established by A.R.S. §49-177 and §49-180, the VRP expects certain documentation to accompany a Work Plan. The following provides a list of attachments/exhibits which are recommended for submittal with a Work Plan to provide the information required by the statutes.

Work Plan Information	Title of Figure/Table/Attachment/Exhibit Where Requested Information is Cited (write N/A if not applicable)	Figure/Table/ Attachment or Report Page Number (write N/A if not applicable)	VRP Use Only
Site Location Map *(topographic or aerial)*	Site Map	Figure 1-1	☐
Site Map *(to scale)*	Site Plan	Figure 1-2	☐
Historical Sampling Data Table	Analytical summary tables	Tables 1-3 through 1-6, 2-3 through 2-8.	☐
Historical Sample Location Map (to scale)	Previous investigations soil sampling locations and pre-design testing boring locations.	Figures 1-5 and 2-1.	☐
Proposed Sample Location Map (to scale)	Not Applicable - Samples will be collected from excavated areas based on SW-846 for sample frequency. The DU areas show the general areas samples will be collected.	Figure 7-2. Section 7.5.1.2. Pages 7-20 and 7-21.	☐
Sampling and Analysis Plan (includes Field Sampling Plan & Quality Assurance Plan)	Section 7.4 and 7.5	Pages 7-9 through 7-26	☐
Proposed Remediation System Location Map	Proposed Excavation Plan	Figure 7-1	☐
Proposed Remediation System Layout (Design Drawings)	Proposed Excavation Plan	Figure 7-1	☐
Schedule for Implementation of Project Activities* (Gantt Style Chart)	Section 7.7	Page 7-27	☐
*Project Activities are defined in A.R.S. §§49-175A.2 through 49-175A.4, and 49-176A.2 (Community Involvement).			
Proposed Language for Public Notification of Remediation (i.e.: example signage)	Section 7.3.3 (English/Spanish, newspaper, site signage, meetings, site status news letters with construction updates).	Page 7-8	☐
Plan for Investigative Derived Waste (IDW)	Section 7.3.2, Special and Hazardous Waste Requirements, and Section 7.4.8 Soil Segregating.	Page 7-6 and 7-7, 7-15 through 7-18.	☐
Evaluation of Remedial Alternatives (i.e: for Feasibility Study Work Plan)	Section 6	Pages 6-1 through 6-6	☐

DOES THE WORK PLAN PROPOSE IMPLEMENTING SITE-SPECIFIC REMEDIATION LEVELS?

Yes ☐ No ☑

DOES THE WORK PLAN PROPOSE EVALUATION OF BACKGROUND LEVELS?

Yes ☑ No ☐

A lead and arsenic evaluation was proposed in the approved Site Investigation Work Plan with results included in the Remedial Action Plan, Section 5.

NOTE: When reports are submitted which document any type of sampling activity, the submittal of Electronic Data per ADEQ's *Groundwater Data Submittal Guidance (V3.4)* is strongly recommended.

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I Manifests and Bills of Lading
J Statistical Evaluation Supporting Documentation
K Human Health Risk Assessment
L Groundwater Protection Level Modeling
M Southwest Gas Corporation Excavation Guidelines
N ADEQ 2001 Letter regarding MGP Remediation Waste

Acronyms and Abbreviations

°C	degree(s) Celsius
A.A.C.	Arizona Administrative Code
A.R.S.	Arizona Revised Statutes
ACM	asbestos-containing material
ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
AHERA	Asbestos Hazard Emergency Response Act
ANOVA	analysis of variance
APS	Arizona Public Service Company
AST	aboveground storage tank
ASTM	ASTM International
ATI	Analytical Technologies Incorporated
AWQS	Arizona Water Quality Standard
AZTEC	AZTEC Engineering Group, Inc.
BAP TEQ	benzo(a)pyrene toxic equivalence quotient
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CESQG	conditionally exempt small quantity generator
CFR	*Code of Federal Regulations*
City	City of Douglas
COC	chemical of concern
Code	City of Douglas Code of Regulations
COPC	chemical of potential concern
CWG	carbureted water gas
DEUR	Declaration of Environmental Use Restriction
DQO	data quality objective
DU	decision unit

ECHO	Enforcement and Compliance History Information
EDR	Environmental Data Resources, Inc.
ELCR	excess lifetime cancer risk
EMAP	All Places of Interest Listing
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
ERI	Environmental Response, Inc.
FINDS	Facility Index System/Facility Registry System
foc	fraction of organic carbon
ft^3	cubic foot (feet)
GC	gas chromatography
GPL	groundwater protection level
HASP	health and safety plan
HHRA	human health risk assessment
HI	hazard index
HIVOL	high volume
HPLC	high-performance liquid chromatography
HQ	hazard quotient
IC	institutional control
IQR	interquartile range
IRA	interim removal action
ISCO	in situ chemical oxidation
LUST	leaking underground storage tank
mg/kg	milligram(s) per kilogram
mg/L	milligram(s) per liter
MGP	manufactured gas plant
MS	mass spectrometry
NAAQS	National Ambient Air Quality Standards

NESHAP	National Emissions Standards for Hazardous Air Pollutants
oz	ounce(s)
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCS	petroleum-contaminated soil
PID	photoionization detection
PPE	personal protective equipment
PRG	preliminary remediation goal
PUF	polyurethane foam
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RAO	remedial action objective
RAP	remedial action plan
RCRA	Resource Conservation and Recovery Act of 1976
RL	reporting limit
RPD	relative percent difference
RPF	relative potency factor
RSL	regional screening level
Site	Douglas Former Manufactured Gas Plant site
SRL	soil remediation level
SSC	Site Safety Coordinator
SVMW	soil vapor monitoring wells
SVOC	semivolatile organic compound
TCE	trichloroethene
TCLP	toxicity characteristic leaching procedure
TPH	total petroleum hydrocarbon
TR	target risk level

UCL	upper confidence limit
USACE	U.S. Army Corps of Engineers
UST	underground storage tank
VCP	voluntary cleanup priorities
VOC	volatile organic compound
VRP	Voluntary Remediation Program
Work Plan	site investigation work plan

1. Introduction

The Arizona Public Service Company (APS) is proposing to conduct remediation activities at the former manufactured gas plant (MGP) site (the Site) in the City of Douglas (the City), Arizona. This remedial action plan (RAP) for the Site provides a summary of the Site history and previous investigations at the Site (Jacobs, 2019a); presents the results of a human health risk assessment, groundwater modeling, and metals evaluation for the Site; discusses the remedial action objectives (RAOs) and remediation technology screening results; and describes the recommended remedial action activities for the Site. APS is conducting the remediation activities under the Arizona Department of Environmental Quality's (ADEQ's) Voluntary Remediation Program (VRP). The VRP site code for the Site is 513300-00.

The Site is located near the southwest corner of East 3rd Street and Pan American Avenue in Cochise County, Section 13, Township 24 South, Range 27 East, Douglas, Arizona U.S. Geological Survey 7.5-Minute Topographic Quadrangle (**Figure 1-1**). The Site is approximately 200 yards north of the international border between the United States and Mexico and west of the Douglas Arizona Port of Entry located at Pan American Avenue.

The properties adjacent to the western Site boundary are owned by El Paso Natural Gas and a private landowner. Property adjacent to the northern, eastern, and southern Site boundaries are owned by private landowners and the City. The area to the north of the Site is characterized by trees and a wash. The area to the east of the Site contains a walkway from the United States-Mexico border to East 3rd Street. This walkway is used by approximately 3,000 pedestrians per day. The area to the south of the Site is undeveloped land primarily used by the U.S. Border Patrol for border security. The area to the west of the Site is largely undeveloped except for an El Paso Natural Gas metering and compressor station and buried Southwest Gas natural gas utility lines that leave the compressor station and run generally east and north from the station.

The Site was formerly owned by Arizona Edison Company Gas Works, APS's predecessor company (EDR, 2018). The MGP was located at the Site from approximately 1905 through 1947 and operated until at least the early 1930s, when MGP operations were terminated. The Douglas Gas Corporation originally owned and operated the MGP until 1925. During the 1930s, Arizona Edison Company converted the plant to natural gas, purchasing natural gas from the El Paso Natural Gas Company for distribution in the City. Arizona Edison Company provided natural gas to the City until the 1950s, after which APS provided natural gas to the City.

APS sold the Site to a private landowner in 1966. The City acquired the property in 1987. The Site property is crossed by an El Paso Natural Gas easement and Southwest Gas natural gas pipeline. The City currently does not use the property; however, construction debris consisting of soil, gravel, asphalt, and concrete has been dumped on the property by outside entities without approval by the City. Prior to the 2019 site investigation activities, the City removed the construction debris from the Site.

A map based on historical documents (Arcadis/Geraghty & Miller,1998; Geraghty and Miller, 1996a, 1996b) is presented on **Figure 1-2**. The map shows the Site layout, including the removed and remaining concrete pads and foundations associated with former MGP operations. The approximate locations of the structures and other features associated with the former MGP were identified based on Sanborn fire insurance maps and previous site investigation reports. The property parcels in relation to former MGP operations, based on the historical reports, are shown on **Figure 1-3**.

Based on the findings of previous investigations (1996–1998) and data from the 2019 pre-design testing investigation (Section 2), former MGP operations have impacted surface and subsurface soils at the site, and compounds potentially related to the former MGP operations and existing subsurface features remain. As a result, the Site requires additional remedial activities, including removal of subsurface features related to former MGP processes and the impacted soil.

1.1 Site Description

The geology and hydrogeology of the Site are described in this section.

1.1.1 Geology

The Site is situated in the Douglas Basin of southeastern Arizona at an elevation of approximately 3,950 feet above mean sea level and lies within the Basin and Range Province in the Sulphur Springs valley. Soils from the ground surface to 5 feet below ground surface (bgs) are generally classified as coarse grained with gravels, gravels with fines, and clayey gravel (EDR, 2018). Based on the 1996 site investigation, soils were classified from the center of the Site (soil boring SB-4 shown on **Figure 1-4**) as silt and sand from ground surface to 3 feet bgs; clay with silt and sand from 3 to 7.5 feet bgs; a mix of clayey silt, silt, sand, and clay from 7.5 to 15 feet bgs; and medium coarse sand from 15 to 16.5 feet bgs (Geraghty and Miller, 1996a). The 2019 pre-design testing investigation soil descriptions are generally consistent with the 1996 site investigation.

1.1.2 Hydrogeology

In 1990, groundwater levels within a 2-mile radius of the Site ranged from 46 to 284 feet bgs (Rascona, 1993). Small perched water zones occur locally in the upper alluvial deposits and likely account for the large variation of water levels. According to the Arizona Department of Water Resources, groundwater below the Site may be perched and was likely to be encountered at a depth of approximately 50 feet, with the direction of groundwater flow below the Site unknown because of limited data (Rascona, 1993). Groundwater wells during the pre-design testing investigation indicated water levels of approximately 27 feet bgs at the Site, with the groundwater gradient oriented in a westerly direction based on 2019 survey data.

1.2 Surrounding Environmental Issues

1.2.1 Local Smelting Operations

The Calumet & Arizona Company and Phelps-Dodge Corporation Reduction Works operated two copper smelters approximately 1 mile west of the Site from 1904 to 1931 and 1931 to 1987, respectively (ATSDR, 1995). During the smelting process, metal ores were heated, producing molten metals and releasing sulfur dioxide and particulate matter through two 600-foot stacks. Between 1970 and 1987, ADEQ and EPA periodically monitored offsite ambient air for concentrations of hazardous substances. Prevailing winds generally blew toward the south and north-northeast. The smelter had a history of stack emission rates for particulate matter and sulfur dioxide gas exceeding U.S. Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS), which led to closure of the smelter in 1987.

In 1985 the Arizona Department of Health Services (ADHS) collected 52 surface samples offsite of the reduction works property from a widespread area in the City to evaluate background lead concentrations in the area. Lead concentrations in the samples ranged from 50 to 1,170 milligrams per kilogram (mg/kg), with an average lead concentration of 254 mg/kg. The Agency for Toxic Substances and Disease Registry (ATSDR) also reported offsite maximum and mean background arsenic concentrations of 35.8 and 15 mg/kg, respectively, for surface samples collected between 1 and 6 miles of the smelter site all of which exceed the residential SRL.

1.2.2 EDR Search

Environmental Data Resources, Inc. (EDR) completed a search of available environmental databases for the Site and the surrounding area. The executive summary for the EDR report (EDR, 2018), including a listing of databases searched, is presented in **Appendix A**.

The Site was identified on the EDR proprietary database for former MGP sites. No other listings for the Site were included in the EDR report. EDR identified 13 additional findings within 1/4 mile of the Site. The findings were included on the following environmental database lists:

- **AST**—Aboveground Storage Tank (AST) Listing
- **AUL**—Activity and Use Limitations list, also known as Declaration of Environmental Use Restriction (DEUR)
- **AZURITE**—ADEQ-maintained repository of sites remediated under ADEQ programs
- **ECHO**—Enforcement and Compliance History Information
- **EMAP**—All Places of Interest Listing
- **FINDS**—Facility Index System/Facility Registry System
- **LUST**—Leaking Underground Storage Tank (LUST) Listing
- **MANIFEST**—Hazardous waste manifest information
- **RCRA-CESQG**— Resource Conservation and Recovery Act of 1976 (RCRA) Conditionally Exempt Small Quantity Generator (CESQG)
- **UST**—Underground Storage Tank (UST) Listing
- **VCP**—Voluntary Cleanup Priorities (VCP) Listing (i.e., voluntary remediation sites)

Seven of the findings were located within 1/8 mile of the Site, with four of the associated facilities having reported releases and/or violations. The companies and/or generators associated with the listings are presented in Sections 1.2.3 and 1.2.4, along with a summary of the key findings.

1.2.3 Releases or Enforcement Actions

- **Border Express**, 305 Pan American Avenue – LUST, UST, EMAP, Enforcement

  Border Express is a commercial fueling station approximately 0.1 mile northeast (upgradient) of the Site. The station had an 18,000-gallon single-walled fiberglass UST installed in 2000 and reported as a LUST in 2012. The UST was removed, the soil was remediated to Tier 1 standards, and the incident was closed by ADEQ in 2013.

- **Douglas Port of Entry**, 1 Pan American Avenue – VCP

  Douglas Port of Entry is the Border Port of Entry for Mexico, located approximately 0.1 mile southeast (upgradient) of the Site. The facility was included on the VCP list for potential groundwater contamination from a former heating oil UST. No further action status for groundwater was issued by ADEQ in 2007 based on benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbon (TPH)-diesel concentrations in the groundwater meeting required remediation levels.

- **U.S. Department Homeland Security Border Station**, 5 N. Pan American Avenue – UST

  The Border Station is located approximately 0.1 mile southeast (upgradient) of the Site. A UST was installed in 1934 and removed in 1990. No impacts to groundwater or other releases were reported.

- **Border Mart Shell, 100 E. 3rd Street** – UST, EMAP, Enforcement, Financial Assurance

  Border Mart Shell is a commercial fueling station approximately 0.1 mile northeast (upgradient) of the Site. The facility has two double-walled 12,000-gallon petroleum USTs installed in 1997. The facility received enforcement notices for violations in 2008 and 2013; the EDR listed the enforcement notice type as ‘not recorded’ and the notices have been closed. No environmental releases have been reported.

- **Douglas Chevron**, 46 N. Pan American Avenue – UST, EMAP, Enforcement, Financial Assurance

Douglas Chevron is a commercial fueling station on the corner of U.S. Highway 191 and 5th Street, approximately 0.2 mile northeast (hydrologically upgradient) of the Site. The station has two 15,000-gallon USTs, which were installed in 2004 to store gasoline and diesel. The facility had reported violations in 2006, 2008, 2013 and 2016. All cases were closed and further investigation was not reported.

1.2.4 Other Environmental Database Findings

- **White Knight Healthcare, Inc.,** 300 S. 1st Street – RCRA-CESQG, FINDS, ECHO

  White Knight Healthcare is a commercial disposable healthcare equipment manufacturing company located approximately 0.2 mile east of the Site (upgradient). It was identified as a CESQG. No violations or releases have been reported.

- **Hamlin, Inc.**, 230 International Ave. – RCRA Nongen, FINDS, ECHO

  Hamlin Inc. is located 0.2 mile east-southeast of the Site and registered with the FINDS database in 1990 and is a RCRA non-generator. No violations or release were reported.

- **Walmart**, 199 West 5th Street – AST, RCRA-CESQG, EMAP, MANIFEST

  Walmart is located approximately 0.25 mile north of the Site (hydrologically downgradient). It is a CESQG with an AST installed in 2004. No violations or releases were reported.

1.3 Douglas MGP Site History

The history of Site operations, a description of MGP processes and waste, and the environmental issues are presented in this section and summarized in **Table 1-1**. Historical information about the Site was obtained from the following documents:

- *Site Investigation, Former Manufactured Gas Plant, Douglas, Arizona* (Geraghty & Miller, 1996a)
- *Composite Soil Sampling, Former Manufactured Gas Plant, Douglas, Arizona* (Geraghty & Miller, 1996b)
- *Material Removal Activities, Former APS Manufactured Gas Plant Site, Douglas, Arizona* (Arcadis/ Geraghty & Miller, 1998)

In addition, the following Sanborn fire insurance maps and aerial photographs from the 1996 Geraghty & Miller site investigation report were reviewed. The maps and photos are presented in **Appendix B**.

- Sanborn Fire Insurance Maps – 1909, 1914, 1929, and 1947 (Geraghty & Miller, 1996a)
- Aerial Photographs – 1958, 1970, 1979, 1984, 1992, 2003, 2007, 2010, and 2017 (EDR, 2018)

1.3.1 Site Ownership and Operational History

Geraghty & Miller Inc. reviewed Sanborn fire insurance maps from 1909, 1914, 1929, and 1947 and gas production statistics from the *Brown's Directory of American Gas Companies* (Brown's Directory) for select years from 1906 through 1932 to develop an operational history of the Site (**Table 1-1**). Additional historical information was obtained from aerial photographs provided by EDR (EDR, 2018) and previous investigation reports.

The Site began operation as an MGP between 1903 and 1908 and continued until the early 1930s, primarily using oil as the feedstock. The Douglas Gas Corporation operated the MGP until 1925. Sanborn maps indicate that the MGP was operated by Arizona Edison Company, a corporate predecessor of APS, from 1925 until it ceased production around 1932. APS sold the property to a private landowner in 1966. The City acquired the property in 1987. The 1929 Sanborn map shows the relative locations of the former

MGP structures. The 1947 Sanborn map shows the Site as mostly vacant, with the former concrete storage shed, purifier, and the concrete meter house still present.

The 1958 aerial photograph in the EDR report has limited resolution; however, the former gas holders and/or concrete pads, purifier structure, and, possibly, the concrete shed are somewhat visible. The wash to the north of the Site is visible, approximately 150 feet north of the purifier structure. The large concrete purifier, small concrete shed, concrete foundations for two gas holders, a generator house, and a steel manhole cover bolted to a crude oil sump were present at the Site in 1996 (Geraghty and Miller, 1996b). Two concrete gas holder pads, two concrete small purifier pads, concrete foundations of the meter house, and a portion of the generator house foundation remained on the Site in 1996 after removal actions were complete (Arcadis/Geraghty & Miller, 1998).

The City property parcel and surrounding property parcels near the Site contained bulk construction debris piles, including soil, concrete, asphalt, and gravel. A vegetative cover can be seen over the construction debris in a 2017 aerial photograph from the EDR report.

The following list provides a summary of the Site structures and operations based on previous investigation reports (Geraghty & Miller, 1996a; Arcadis/Geraghty & Miller, 1998). The approximate locations and sizes of existing and former structures/features based on historical reports are shown on **Figure 1-2**.

- **Generator House**. The generator house was used to manufacture oil gas, with an annual production ranging from approximately 13,700,000 cubic feet (ft^3) in 1910 to approximately 51,500,000 ft^3 in 1930. A portion of the generator house foundation remains on the Site. Based on available Sanborn maps, the generator house foundation is approximately 4,000 square feet.
- **Oil Sump/Tank.** An oil sump, approximately 2.5 feet in diameter and 3.5 feet tall and associated with a suspected aboveground oil tank of unknown capacity, was located west of the large purifier. The oil sump/tank was removed in August 1996.
- **Gas Holders**. Two gas holders of unknown capacity were located east and southeast of the generator house. The concrete gas holder foundations/pads remain on the Site. Based on available Sanborn maps, the gas holders have a combined area of 6,000 square feet.
- **Purifiers**.
  - One large purifier structure, approximately 40 feet in diameter and 15 feet high, was located northeast of the generator house. The large concrete purifier pad was removed in August 1996.
  - Two small purifiers of unknown capacity were located east of the generator house. The two small concrete purifier pads remain on the Site. Based on available Sanborn maps, the purifiers have a combined area of 500 square feet.
- **Meter House**. A meter house of unknown size was located southeast of the generator house. The foundation of the meter house remains on the Site. Based on available Sanborn maps, the meter house foundation is approximately 400 square feet.
- **Debris Pile.** One debris pile, 250 feet long (north-south direction) by 130 feet wide, was located west of the generator house. The debris pile was removed in August 1996.
- **Storage Shed.** One small concrete storage shed, 10 feet long by 10 feet wide, was located north of the generator house. The concrete shed was removed in August 1996. The concrete foundation of the shed was not observed on the Site during the pre-design testing investigation conducted in 2019 (Jacobs, 2019a).

1.3.2 Description of MGP Processes

In the United States, the first uses of manufactured gas for lighting were reported in Philadelphia in 1796 and in Richmond, Virginia, in 1803. Manufactured gas was produced by the following three primary processes:

- Coal carbonization (coal gas)

- Carbureted water gas (CWG)
- Oil gas

Based on historical records, only the oil gas process was used at the Site (Geraghty & Miller, 1996a). However, the coal gas and CWG processes are described in this section for comparison with the oil gas process.

1.3.2.1 Coal Carbonization

The earliest MGPs used coal carbonization to produce gas. Coal gas was used exclusively from 1816 to 1875, when the CWG process was developed. Coal was used as a feedstock to produce gas in various types of retorts, with coke generated as a byproduct. Based on historical records, coal gas was not used at the Site.

1.3.2.2 Carbureted Water Gas

CWG involves the enhancement of water gas (blue gas) by spraying oil into a hot vessel that contains the water gas, thereby increasing the calorific value of the water gas. Blue gas was an abundant byproduct of the petroleum industry, which made CWG the most important manufactured gas process in the United States at the time.

The CWG process is intermittent, with alternating "blows" or blast periods and "runs" or gas-making periods. The typical CWG-generating equipment consisted of three brick-lined cylindrical steel vessels: the generator, the carburetor, and the superheater. During a blow, a producer gas that is high in carbon dioxide is formed in the generator by passing air through an incandescent mass of coke or anthracite. This gas is burned by secondary air. The hot products of combustion heat the carburetor checkbrick and then pass from the top of the superheater to the stack. During a run, water gas is made in the generator and then passed into the top of the carburetor, where the oil is sprayed. This mixture is passed down through the carburetor and up through the superheater. As the mixture passes the hot checkbrick, the mixture is thermally cracked and fixed into gases. The CWG, a mixture of blue and oil gas, is passed from the top of the superheater through a water-sealed wash box, where the gas is initially cooled and some of the heavy tars are condensed and removed.

The gas is passed through additional condensers to cool the gas to ambient temperatures. Direct contact with water cools and scrubs the gas. The gas is then sent to a relief holder, which provides constant pressure for gas outflow to the purifying systems during blows and runs. Larger plants featured tar extractors, naphthalene scrubbers, and liquid purification systems to remove the bulk of the hydrogen sulfide prior to passing the gas through the dry purification systems. After hydrogen sulfide removal at these larger plants, the gas was metered and sent to the storage holders pending distribution to the customers.

1.3.2.3 Oil Gas

The oil gas process consists of thermocracking oil in a steam atmosphere. The generating equipment is similar to that used by CWG production. The generator was replaced by a vaporizer similar to the carburetor, filled with checkbrick, and equipped with an oil spray. The carburetor was replaced by a vaporizer followed by a superheater, similar to the CWG process.

The process is cyclical and consists of blows and runs. During a blow, oil is combusted in the vaporizers, and the products of combustion heat the checkbrick of the vaporizers and superheater and pass from the top of the superheater to the stack. During a run, oil is sprayed into the vaporizer in the absence of air and in the presence of steam. As the mixture passes the hot checkbrick, it is thermally cracked and fixed into gases.

During the run, the stack valve is closed and the oil gas passes to the washbox. The remainder of the process is the same as the CWG process.

1.3.3 Description of MGP Waste

The information in this section was obtained from the historical information regarding MGP processes and previous reports.

Byproducts formed during the manufacture of oil gas were iron oxide purifier waste, light oils, tar, and lampblack. The light oils and tars were generally recovered during condensing or scrubbing operations. Each waste is described as follows:

- **Lampblack** – The formation of a large amount of lampblack was unique to the oil-gas processes. Lampblack resulted from the high temperature of the gas-making operation, and the amount of lampblack recovered depended on the manufacturing process used. In most plants, lampblack was regarded as a valuable byproduct and was the source of additional revenue or was used as fuel. Depending on the process, approximately 20 pounds of lampblack were formed for every 1,000 ft^3 of gas manufactured, with the majority of the lampblack removed from the gas stream in the wash box. The water from the wash box containing this lampblack in suspension passed through large overflow pipes and was typically stored in settling ponds. Available evidence does not indicate the former presence of a lampblack settling pond. However, because the oil gas process was used at the Site, it is likely lampblack was produced. The chemical constituents of lampblack include carbon, polynuclear aromatic hydrocarbons (PAHs), and heavy metals.
- **Tar** – Tar was primarily a product of the coal carbonization processes, and to a lesser extent, the carbureted water gas processes; the oil-gas processes produced the least amount of tar and consisted of complex hydrocarbons that were removed from the gas stream immediately after generation during cooling, were condensed during gas cooling in the relief holder, or were removed during secondary purification. Areas where tar may have accumulated include the gas holders, areas along underground piping, areas adjacent to gas generators and scrubbers, and in a lampblack settling pond. Chemical constituents of tar include volatile aromatic hydrocarbons and PAHs. The tar was primarily reused as a supplement to boiler fuels, with a small fraction sold.
- **Fuel Oil** – Fuel oil was used as the primary feedstock material for the oil-gas process. Oil was sprayed into the gas-generating apparatus and cracked into lighter hydrocarbon fractions during gas production. Various grades of fuel oil were likely used throughout the Site's history, with increased use of heavy fuel oil or residual oil during peak production years. Areas where oil may be encountered include fuel oil tanks and oil storage tanks. Oil used at the Douglas property was likely stored in an aboveground steel crude oil tank at the Site (**Figure 1-2;** Geraghty & Miller, 1996a).
- **Iron Oxide Purifier Waste** – Wood chips saturated with ferric hydrate were used to remove the hydrogen sulfide from the gas during the final purification process. Some tars or lampblack may also have been removed in the purifiers. Wood chips were replaced as they became depleted or "spent." Areas that may be impacted by iron oxide purifier waste include the former purifier locations and area between the purifiers. Constituents include metals, sulfur, sulfate

1.4 Previous Site Investigations and Interim Remedial Actions

Since 1995, the following site investigations and interim remedial action (IRA) have been conducted at the Site:

- **1995** – **Site Investigation.** Geraghty & Miller conducted a site investigation, with sampling events in October 1995 and December 1995, to evaluate the presence of MGP residuals at the Site. The primary purpose of the investigation was to assess the nature and extent of potential contamination resulting from past MGP activities at the Site and to assess the presence of potential pathways of contaminant migration. The site investigation was limited to surface and shallow subsurface soil sampling (up to 21 feet bgs). A total of 14 surface soil samples, 23 subsurface soil samples, and 2 duplicate samples were collected.
- **1996** – **Site Investigation**. Based on 1995 investigation results, Geraghty & Miller collected five composite surface-soil samples on June 1, 1996, within a 20-foot radius of the areas where MGP impacted soil was previously identified. Each composite sample consisted of six to eight discrete locations within each sampled area. In addition, a composite of the five composite samples was

submitted to the laboratory for analysis. Based on visual observation and data from the site investigation, five areas of the Site were identified and recommended for soil removal.

- **1996 – Interim Remedial Action.** Geraghty & Miller conducted material removal and sampling activities in August 1996 to address the five areas recommended for soil removal. Based on the analytical results from the initial removal action, three additional areas were identified for soil removal.

Prior to 1997, soil data were compared to ADEQ residential and non-residential health-based guidance levels. In December 1997, Chapter 7, Article 2 of the Arizona Administrative Code (A.A.C.) was amended to establish predetermined residential and non-residential soil remediation levels (SRLs) to protect human health and the environment that were consistent with the methodology used by EPA and Region 9 EPA guidance for the calculation of risk-based screening levels. ADEQ revised these SRLs, effective May 5, 2007. The 2007 SRLs have been used when comparing concentrations to the SRLs unless otherwise noted.

The previous investigations occurred before 1997, when the SRLs were promulgated, or used the 1997 SRLs for comparison during evaluations. To provide consistency, this section compares the results of previous investigations to the 2007 SRLs. Most of the compounds identified in the 2007 SRLs as carcinogens include residential SRL values for both 1×10^{-5} and 1×10^{-6} excess lifetime cancer risks. The 1×10^{-5} risk value may be used during remediation unless a future use of the site will be as a childcare facility or school. Sample results were compared to the 1×10^{-5} risk value for carcinogens because the Site is not currently used for, or anticipated to be used for, a school or daycare facility.

The following sections present an overview of the investigations and IRA, including soil sampling results. The former soil sampling locations are shown on **Figure 1-4**.

1.4.1 Soil Investigations

Soil sampling was conducted during previous investigations by Geraghty & Miller and Arcadis/Geraghty & Miller in 1995 and 1996. The soil sample locations from the 1995 soil investigation and the areas where composite samples were collected prior to and after the 1996 soil removal activities are shown on **Figure 1-4**. The previous soil investigations evaluated the presence of MGP-related contaminants in soil, including PAHs, TPHs, and metals. BTEX was also detected in the oil sludge in the oil sump for waste characterization purposes. The analytical results from former sampling activities for PAHs, TPHs and fuel hydrocarbons, BTEX, and total metals and reactive sulfide are shown in **Tables 1-2, 1-3, 1-4,** and **1-5**, respectively. **Table 1-6** provides a description of the previous boring locations and sampling depths. The locations where PAH, lead, arsenic, and TPH were detected during previous investigations are shown on **Figures 1-5, 1-6, 1-7,** and **1-8**, respectively, and further identifies the locations with concentrations above residential or non-residential SRLs.

1.4.1.1 October 1995 – Soil Investigation

The October 1995 site investigation included surface and subsurface soil sampling. Fourteen surface soil samples, 23 subsurface, and 2 duplicate samples were collected. Four of the surface samples (SS-8, SS-11, SS-12 and SS-13) were collected from offsite locations to evaluate local background concentrations of MGP-related compounds. Surface sample locations and soil boring locations are shown on **Figure 1-4.**

1.4.1.1.1 Surface Sampling

Fourteen surface samples were collected between the ground surface and 6 inches bgs. Samples were analyzed for PAHs, total cyanide, and total metals by Analytical Technologies Incorporated (ATI) laboratory in Phoenix, Arizona. Analytical results for PAHs are presented in **Table 1-2**, and results for metals and cyanide are presented in **Table 1-5**.

Eight of the surface soil samples exceeded the residential SRLs for select PAHs as follows:

- **SS-1** – Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- **SS-5** – Benzo(a)pyrene, benzo(b)fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- **SS-6** – Benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- **SS-7** – Benzo(a)pyrene and indeno(1,2,3-cd)pyrene
- **SS-2, SS-10** and **SS-14** – Benzo(a)pyrene

Five of the surface soil samples also exceeded the non-residential SRLs for select PAHs as follows:

- **SS-1** – Benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene
- **SS-5** – Benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- **SS-4, SS-6,** and **SS-7** – Benzo(a)pyrene

The highest concentrations of all PAHs detected were in sample SS-5. Benzo(a)pyrene was detected at a concentration of 230 mg/kg. The residential SRL for benzo(a)pyrene is 0.69 mg/kg. SS-5 was located on the north end of the Site and was not adjacent to any known former MGP structures. The locations where PAHs were detected above SRLs during the October 1995 investigation are shown on **Figure 1-5**.

Arsenic was detected above the residential and non-residential SRL of 10 mg/kg in 11 of the surface samples (SS-1 through SS-7, SS-9, SS-10, SS-11, and SS-13). The highest concentration of 83.5 mg/kg was detected in sample SS-6. Lead was detected in samples SS-6 and SS-7 at concentrations of 2,530 mg/kg and 2,290 mg/kg, respectively, which is above the non-residential SRL for lead of 800 mg/kg. SS-6 and SS-7 were located adjacent to the southern former gas holder and the purifier structure, respectively. The locations where lead and arsenic were detected above the SRLs during the October 1995 investigation are shown on **Figures 1-6** and **1-7,** respectively. Maximum and mean lead concentrations of 1,170 and 254 mg/kg, respectively, were reported in soil collected from a widespread area in the City and maximum and mean arsenic concentrations of 35.8 and 15 mg/kg, respectively, have been reported by the ATSDR in the same area (ATSDR, 1995). The previous remediation effort (Arcadis/Geraghty & Miller, 1998) assumed that the 1995 ATSDR mean arsenic and lead concentrations were representative in the vicinity of the Site and used the mean arsenic concentration as the target soil quality criteria for arsenic. For this RAP, a statistical evaluation of background metals concentration at or near the Site is provided in Section 3, and the surrounding environmental issues are described in Section 1.2.

1.4.1.1.2 Soil Boring Sampling

Twenty-three subsurface samples were collected from 10 soil borings at depths ranging from 1.5 feet to 21.5 feet. The borings were located near former MGP structures. An onsite ATI mobile laboratory analyzed the subsurface samples for BTEX and TPH. Subsurface soil samples that were visibly degraded were also analyzed for total metals, cyanide, and PAHs at the ATI fixed-base laboratory in Phoenix, Arizona. The analytical results for PAHs, TPHs, BTEX, and total metals are presented in **Tables 1-2, 1-3, 1-4,** and **1-5**, respectively.

Samples from borings SB-1, SB-2, SB-6, and SB-9 had detections of at least one PAH compound at depths ranging from approximately 1 foot to 10 feet. The only concentration exceeding a residential and/or non-residential SRL was observed in boring SB-4 at 1.5 feet bgs, with a benzo(a)pyrene concentration of 4.5 mg/kg, which exceeded the non-residential SRL of 2.1 mg/kg. SB-4 was located north of the small purifiers and west of the central gas holder. The remaining PAH results from all borings were below the residential SRL. The locations where PAHs were detected above SRLs during the October 1995 investigation are shown on **Figure 1-5**.

BTEX compounds were not detected above the laboratory reporting limit (RL) of < 0.025 mg/kg in any of the soil boring samples. TPH was detected in three soil borings (SB-1, SB-4, and SB-8), with a maximum

concentration of 4,000 mg/kg in boring SB-4 at a depth of 1.5 feet bgs. The deepest observed TPH concentration was at approximately 10 feet bgs in boring SB-8. The locations where TPH was detected during the October 1995 investigation are shown on **Figure 1-8**.

Arsenic was detected above the residential and non-residential SRL of 10 mg/kg in all samples collected from the 10 soil boring locations, except in 1 sample from boring SB-8. Arsenic concentrations ranged from 8.7 to 42.1 mg/kg at depths of up to 16.5 feet, with the highest concentration of 42 mg/kg detected in boring SB-2 at approximately 10 feet bgs.

1.4.1.1.3 Oil Sump and Purifier Contents Sampling

Waste characterization samples were collected from the sludge in the oil sump and the contents of the large purifier. Two samples were collected from the oil sump contents (one for total metals and one for volatile organic compounds [VOCs] and semivolatile organic compounds [SVOCs] analysis) and one sample was collected from the purifier for reactive sulfide. The oily sludge sample from the oil sump was analyzed for TPH, RCRA metals, VOCs, and SVOCs, and the purifier contents sample was analyzed for sulfides, with the following results:

- Total hydrocarbon concentration of 477,000 mg/kg
- Fuel hydrocarbons measured as C6-C10, C10-C22, and C22-C36, with concentrations of 7,300, 270,000, and 200,000 mg/kg, respectively
- No detections of toxicity characteristic leaching procedure (TCLP) SVOCs (analyzed in accordance with the TCLP preparation for hazardous waste characterization)
- One VOC (xylene) detected at 180 mg/kg
- Lead and barium concentrations of 1.7 and 0.6 milligram per liter (mg/L), respectively (analyzed for RCRA total metals)
- Silver, arsenic, cadmium, chromium, mercury, and selenium were not detected based on total metals analysis

Samples were collected from the contents of the purifier from the surface to approximately 6 inches bgs on October 25, 1995 (sample SS-3) and March 20, 1996 (sample “Purifier”). The results from sample SS-3 were as follows:

- Total arsenic at 17.9 mg/kg, above the residential and non-residential SRLs
- PAH and total metals concentrations below the residential SRLs
- Reactive sulfide concentration of 30.3 mg/kg (no SRL)
- Total sulfur content of approximately 12 percent (no SRL)

The contents of the oil sump and the purifier were not characterized as RCRA hazardous waste during the investigation.

1.4.1.2 June 1996 – Composite Surface Soil Sampling

Based on the October 1995 investigation results, composite surface soil sampling was conducted in the areas where the soil appeared to have been impacted by former MGP operations above ADEQ health-based guidance level criteria. The purpose of the sampling effort was to characterize material that potentially could be disposed of during remedial activities.

Samples were collected within a 20-foot radius of each of the five former surface sampling locations (SS-1 and SS-4 through SS-7) that appeared to have been impacted by MGP operations, based on the analytical results from the previous investigation. Sampling areas are shown on **Figure 1-4**. Composite samples were also collected near the offsite background surface sample locations SS-11 and SS-12. A composite sample of all the samples collected (Sample COMP) was also analyzed. The composite samples were analyzed for TPH, TCLP metals, SVOCs, and total metals to evaluate whether soil would

need to be managed as a RCRA hazardous waste or an Arizona special waste petroleum-contaminated soil (PCS) during remedial activities.

TPH was detected in all composite samples at concentrations ranging from 40 to 780 mg/kg (SS-6 Area). TPH was also detected in the offsite composite sample from Area SS-11/SS-12 at a concentration of 110 mg/kg. TPH concentrations are presented in **Table 1-3.** Concentrations of BTEX compounds were below the laboratory detection limit of 0.025 mg/kg, as presented in **Table 1-4. Figure 1-8** shows the composite sampling areas where TPH was detected during the October 1995 investigation.

Arsenic concentrations exceeded the residential and non-residential SRL of 10 mg/kg in samples from Areas SS-4/SS-7 and SS-6. Lead concentrations exceeded the non-residential SRL of 800 mg/kg in the sample from area SS-6 (1,100 mg/kg) and the residential SRL of 400 mg/kg in the sample from area SS-1 (410 mg/kg). Total metals concentrations are presented in **Table 1-5**. The composite sampling areas where lead and arsenic were detected above SRLs during the October 1995 investigation are shown on **Figures 1-6** and **1-7,** respectively.

TCLP metals and TCLP SVOCs were below the RCRA toxicity characteristic limits.

1.4.2 Remedial Activities – Interim Removal Actions

Based on visual observation and data collected from the soil investigations, the following areas were identified for material removal:

- Oil sump contents
- Purifier structure contents
- Surface soil impacted with metals
- Surface soil impacted with hydrocarbons
- Debris and cinder pile impacted with hydrocarbons

Material removal activities were conducted in two phases. Phase I consisted of removing the debris and cinder pile, select surface soil, the contents of the purifier and oil sump, the concrete shed in the northwestern portion of the Site, and the purifier. Phase II consisted of removing additional surface soil. The remedial action levels used were the 1996 non-residential health-based guidance levels for PAHs. An arsenic cleanup criteria of 15 mg/kg was applied during the 1996 remediation effort based on the ATSDR (ATSDR, 1995) background arsenic concentration for the City area that was also used during the 1995 site investigation (described in Section 1.4.1.1.1).

The analytical results for soil sampling activities conducted during the soil investigations and removal actions are shown in **Tables 1-2** through **1-5**. The locations where PAHs, lead, arsenic, and TPH were detected in previous investigations and IRAs are shown on **Figures 1-5, 1-6, 1-7,** and **1-8**, respectively, and further identify the locations where concentrations exceeded residential or non-residential SRLs. TPH does not have an associated 2007 residential or non-residential SRL. Details of the Phase I and Phase II IRAs are provided in this section.

1.4.2.1 August 1996 – Phase I Interim Removal Action

The Phase I IRA was performed in August 1996 and consisted of the following:

- Removing the debris and cinder pile
- Removing the oil sump
- Removing the concrete shed and purifier
- Removing impacted surface soil previously identified as being impacted with metals and/or PAHs and performing confirmation sampling to evaluate whether additional soil removal was required

Environmental Response, Inc. (ERI) was the IRA contractor performing demolition and removal activities; Geraghty and Miller prepared the work plan; and Arcadis/Geraghty Miller provided oversight of ERI and collected soil confirmation samples.

1.4.2.1.1 Debris Pile Removal and Sampling

The debris pile was removed in August 1996. An area measuring 130 feet in an east-west direction by 250 feet in a north-south direction was excavated until visibly clean soil was observed. Available information did not indicate the depth of excavation and referred to the samples as “surface samples.” The excavated area is shown on **Figure 1-4** (Geraghty and Miller, 1996b).

The material from the debris pile was placed on a shaker apparatus to separate bricks, vegetation, and other miscellaneous debris from the lampblack material. The lampblack was transported to Waste Management’s Butterfield Station Regional Landfill as a special waste PCS and the remaining debris was characterized as PCS solid waste.

Following removal of the debris pile, an area measuring 100 feet east-west by 125 feet north-south was divided into twenty 25-foot square sections, as shown on **Figure 1-5**. A composite sample was collected from each section and analyzed for TPH. If TPH concentrations exceeded 30 mg/kg in a grid section sample, an additional foot of soil was excavated, and a second composite sample was collected. Samples were labeled based on the section from which they were collected (i.e., Debris #) with a “B” added if the area was further excavated and sampled again.

Five additional composite samples (Debris A, B, C, D, and E) were collected by compositing the samples from four grid sections. The samples were submitted to the laboratory for the analysis of lead, arsenic, and PAHs. The composite sampling areas are shown on **Figure 1-5**.

Laboratory TPH results of the section samples indicated the initial samples from grid sections 3, 4, 9, and 19 exceeded 30 mg/kg, with a maximum concentration of 590 mg/kg in sample Debris 4. An additional 1 foot of soil was excavated in these areas and a composite sample of the remaining samples was collected. All results from the second sampling effort were below the laboratory detection limit of 20 mg/kg.

One PAH (benzo(a)pyrene) result of 0.7 mg/kg at area Debris A exceeded the residential SRL of 0.69 mg/kg. Arsenic results from area samples ranged from 14 to 19 mg/kg, exceeding the residential SRL for arsenic, with the results consistent with the ATSDR mean and maximum values of 15 and 35.8 mg/kg, respectively (ATSDR, 1995). It should be noted the 1995 site investigation used the best available information to estimate a background arsenic value, using the mean concentration of 15 mg/kg determined from ATSDR information as the background value in 1995. Lead results ranged from 12 to 100 mg/kg and were below the residential SRL of 400 mg/kg in all samples and below the non-residential SRL. Background metals are further discussed in Section 3.

1.4.2.1.2 Oil Sump Removal

The contents of the oil sump were removed on August 13, 1996. Approximately 30 gallons of fluid were removed. The oil sump was removed on August 16, 1996. When removed, the sump was approximately 2.5 feet in diameter and 3.5 feet long, with no perforations. No visible staining of the surrounding soil was observed during sump removal. The oil sump and contents were recycled at the proper facility. No additional soil sampling was performed at the oil sump location.

1.4.2.1.3 Shed and Purifier Removal and Sampling

The concrete shed and purifier were removed in August 1996 and included the following activities:

- On August 5, 1996, Spray Systems Environmental performed an asbestos inspection prior to removing the concrete shed and purifier and submitted a National Emission Standards for Hazardous Air Pollutants notification for demolition of the structures.

- On August 19, 1996, approximately 261 tons of material were removed from the purifier structure and transported to Waste Management's Butterfield Station Regional Landfill as solid waste. The shed and purifier structure were demolished (the concrete pad remained), and approximately 230 tons of concrete from the shed and purifier structure demolition were transported to Speedway Landfill for management as a solid waste.
- On August 20, 1996, composite samples were collected from the following surface locations (**Figure 1-8** and **Table 1-3**) and submitted to the laboratory for TPH analysis:
  - Area adjacent to the north of the purifier (PUR-N)
  - Area adjacent to the south of the purifier (PUR-S)
  - Area adjacent to the east of the purifier (PUR-E)
  - Area adjacent to the west of the purifier (PUR-W)

  TPH concentrations in the composite samples ranged from 71 mg/kg at PUR N to 520 mg/kg at PUR E.
- On August 21, 1996, the concrete purifier pad was removed and approximately 78 tons of concrete were transported to Waste Management's Butterfield Station Regional Landfill as solid waste.

  Soil to the north and west of the concrete pad was excavated. Depth of the excavation was not provided in the report but is estimated to be approximately 1 foot bgs based on other activities at the site. Soil to the south and east of the pad was not excavated because of the presence of a gas line, which is owned by El Paso Natural Gas.

  Composite samples were collected after soil was graded below the purifier pad and north of the purifier pad (the actual depth of sampling was not provided) from the following locations (**Figure 1-8**) and analyzed for arsenic, lead, and TPH:
  - Area adjacent to the north side of the purifier (PUR N with 8/21/1996 date)
  - Below the former purifier pad (subpurifier)

  TPH concentrations were 140 and 57 mg/kg, from PUR N and the subpurifier, respectively. Arsenic concentrations were 11 and 15 mg/kg from PUR-N and the subpurifier, respectively, which are above the residential and non-residential SRLs of 10 mg/kg and below and equal to the ATSDR-determined mean arsenic concentration of 15 mg/kg (Section 1.4.1.1.1).
- On August 22, 1996, the area north of the purifier pad and the area below the purifier pad was regraded and composite samples were collected (PUR N-B and SUBPUR B) and submitted for PAH analysis. Depth of excavation was not provided in the report but is estimated to be approximately 1 foot bgs. PAHs were detected in PUR-N-B below residential SRLs.

  The composite sampling locations are shown on **Figure 1-5**.

1.4.2.1.4 Surface Soil Impacted with Metals and PAHs Removal and Sampling

Surface soil sampling results from four locations (SS-4 through SS-7) sampled in October 1995 and June 1996 had detections of arsenic, lead, and PAHs. Because of the proximity of SS-4 and SS-7, these two areas were combined and are referenced as SS4/SS-7, resulting in three material removal areas (SS4-7, SS5, and SS6).

On August 19, 1996, approximately 1 foot of soil was removed from each area, resulting in a total of 894 tons of soil and other materials transported offsite to Waste Management's Butterfield Station Regional Landfill as solid waste PCS.

Samples were collected from the base of the excavation after soil removal and analyzed for TPH, arsenic, lead and PAHs, as follows:

- One composite sample (SS4-7) from combined area SS4/SS7
- One composite sample (SS5 Comp) from excavated area SS-5

- Three composite samples (SS6W, SS6CENT, and SS6E) from the west, central, and eastern portions of area SS-6

TPH was not detected above the laboratory RL of 20 mg/kg in SS-5 and SS-4-7 samples. Lead concentrations were below residential SRLs. Arsenic concentrations of 11 and 15 mg/kg for SS-5 and SS-4/SS-7, respectively, were above the residential and non-residential SRL of 10 mg/kg and below and equal to the mean ATSDR background concentration of 15 mg/kg.

TPH concentrations in SS6W, SS6CENT, and SS6E ranged from 39 to 53 mg/kg; lead ranged from 11 and 217 mg/kg (below the residential lead SRL); and arsenic concentrations ranged from 18 to 24 mg/kg (above the SRL of 10 mg/kg and between the mean and maximum ATSDR background concentration of 15 and 35.8 mg/kg).

A composite sample (SS6 PAH Comp) of SS6W, SS6CENT, and SS6E was also submitted for PAH laboratory analysis. The benzo(a)pyrene result of the composite sample was 2.9 mg/kg, which was above the residential SRL.

1.4.2.2 November 1996 – Phase II Interim Remedial Action

The Phase II IRA was performed in November 1996 for removal of the following:

- Additional soil in the SS-6 area
- Additional soil in the area south and east of the purifier
- Additional soil along the western fence of the Site

Excavated areas were identified based on Phase I IRA results and visibly impacted soil. An Orange Coast Analytical Laboratory was onsite with a mobile laboratory to analyze samples for PAHs and determine the extent of the excavation. Samples were not collected from under the generator house, meter house, small purifiers, or gas holder foundations. An El Paso Natural Gas representative was onsite to assist representatives of Arcadis/Geraghty Miller in locating the El Paso gas line.

1.4.2.2.1 Removal Activities

Additional removal activities were conducted on November 4 and 5, 1996, as follows:

- On November 4, 1996, approximately 1 foot of soil was removed from the SS-6 area and composite samples (SS6WC, SS6CC, and SS6EC) were collected from the west, center, and east areas of the excavation and analyzed for PAHs. All sample results were below the residential SRL.
- On November 5, 1996, visibly impacted material was removed from the west fence line and a composite sample (WESTFENCE) was collected for PAH analysis. All sample results were below the residential SRL.
- On November 5, 1996, 1 foot of soil was removed from the south and east of the former purifier and three composite samples were collected (PURS31, PURS32, and PURE31) and analyzed for PAHs with the following results:
  - PURS31 results for benzo(a)pyrene (6.6 mg/kg) and benzo(a)anthracene (6.9 mg/kg) exceeded the non-residential and residential SRLs, respectively.
  - PURS32 result for benzo(a)pyrene (1.8 mg/kg) exceeded the residential SRL.
  - PURE31 result for benzo(a)pyrene (0.64 mg/kg) was below the residential SRL.
- Because of the presence of MGP-impacted soil, an additional 1.5 feet of soil were excavated at these locations and two additional composite samples (PURS41 and PURS42) were collected. Benzo(a)pyrene exceeded the residential SRL with a result of 1.5 mg/kg at the PURS42 location. The remaining PAH results were less than the residential SRL.

Approximately 380 tons of material were removed during Phase II activities and transported to Waste Management's Butterfield Station Regional Landfill as solid waste PCS. Upon completion of Phase II activities, approximately 400 tons of clean fill material were used to regrade the Site.

1.4.2.2.2 Investigation-derived Waste

ERI transported the material removed from the site. All petroleum-contaminated material removed during 1996 was transported to Waste Management's Butterfield Station Regional Landfill for management as PCS. All petroleum-contaminated material removed during 1997 was transported to Waste Management's Butterfield Station Regional Landfill for management as a special waste PCS. The uncontaminated solid waste was transported to Speedway Landfill in Tucson, Arizona. The oil sump contents were transported to Allen Moore Diversified Services Incorporated in Chandler, Arizona, to be recycled. The oil sump itself was transported to EMCO Recycling in Phoenix, Arizona, to be recycled (Arcadis/Geraghty & Miller, 1998).

1.5 Site Conditions Prior to Pre-Design Testing Investigation

After the site investigations and IRAs of the 1990s and prior to the pre-design testing investigation in 2019, dumping of construction materials took place at the Site. From 1998 to 2019, construction debris and soil piles accumulated, covering the majority of the City property and private property at the Site with 10-foot-high debris piles. The City removed the debris piles to enable pre-design testing investigation activities.

Based on historical data from previous material removal activities (Arcadis/Geraghty & Miller, 1998), the following five areas at the Site contain soil with concentrations above the current benzo(a)pyrene residential SRL:

- The previous removal action reported an Area A-2 sample concentration of 0.7 mg/kg within the debris and cinder pile removal area after the previous remediation efforts, which is above the current benzo(a)pyrene SRL of 0.69 mg/kg. Pre-design boring B19 within the debris and cinder pile area and Debris A area was used to evaluate this location.
- The benzo(a)pyrene results for the PUR-S 32/42 area south of the former large purifier (which was removed) and northwest of the small northwest purifier pad were 1.8 (PURS32) and 1.5 mg/kg (PURS42) at 1 foot and 2.5 feet bgs, respectively, after the previous remediation efforts. Pre-design boring B17 was used to evaluate this area.
- The benzo(a)pyrene result for the SS-10 surface sample collected west of Gas Holder 1 and south of the former debris pile was 1.3 mg/kg. Pre-design boring B22 was used to evaluate the SS-10 location.
- The benzo(a)pyrene result for the SS-14 surface sample collected north of Gas Holder 2 was 0.76 mg/kg. Pre-design boring B23 was used to evaluate the SS-14 location.
- The benzo(a)pyrene result for the SS-5 surface sample collected north of former MGP operations was 230 mg/kg, in addition to benzo(b)fluoranthene, benzo(a)anthracene, indeno(1,2,3-cd)pyrene, benzo(k)fluoranthene, and dibenzo(a,h)anthracene results of 170, 160, 160, 93, and 8.6 mg/kg, respectively. Results from the 1996 IRA at this location indicated reductions of all PAHs to below residential SRLs after soil excavation. However, the excavation appears to have been conducted off center to SS-5 location. Pre-design boring B21 was used to evaluate PAH concentration north of the SS-5 excavation location and SS-5 surface sampling location.

The 1997 post-remediation PAH concentrations listed in the previous bullets and associated boring locations and the 2019 pre-design testing investigation results for PAHs above the residential SRL are shown on **Figure 1-9**. The sampling depths during the previous investigation are also shown on **Figure 1-9**.

The Site surface elevation has likely changed between 1998 and 2019 due to the accumulation and removal of surface soil between 1998 and 2019. Therefore, the recent pre-design testing data have been used to evaluate the current Site surface conditions. As described previously, some of the 2019 pre-design surface sample locations were designed to evaluate the existing surface conditions based on the

1996 results (Debris A-2, SS-10, and SS-14). At these locations (B-19, B-22, and B-23), surface sample results for PAHs were below the residential SRLs.

The 1996 soil boring data were all below the residential PAH SRLs except for soil boring SB-4, which had a benzo(a)pyrene result of 4.5 mg/kg at 0 to 1.5 feet bgs. Soil boring SB-4 was located within the PURS32/42 excavation area, which was excavated to 2.5 feet bgs, thereby removing the SB-4 area of high PAH concentration. Depths of sample collection during the 1996 investigation were inconsistent, meaning some borings were sampled only at 9 to 10.5 feet bgs, while others were sampled at 0 to 1.5, 3 to 3.5, 4.5 to 6, 9 to 10.5, 15 to 16.5, or 20 to 21.5 feet bgs, or a combination of these sample depths. The soil boring sampling depths during the 1996 investigation are shown on **Figure 1-9**. The 2019 pre-design testing investigation soil boring depths were sampled at a minimum of every 5 feet to a minimum depth of 20 feet bgs, with soil borings within the Site extent also including the sample intervals at 2.5 to 3 and 7.5 to 8 feet bgs.

Prior to pre-design testing investigation activities, a site fence was installed to prevent dumping at the Site. AZTEC Engineering Group Inc. performed a property boundary survey the week of October 7, 2019, and Daryca installed a Site security fence with a lockable entrance gate between October 14 and 28, 2019.

2. Pre-design Testing Investigation

Jacobs completed pre-design testing investigation activities between October 27, 2019 and November 8, 2019. The purpose of the pre-design activities was to:

- Evaluate surface and subsurface soil contamination to further define vertical and lateral extents of MGP-related compounds at the Site.
- Evaluate background metals concentrations near the Site.
- Evaluate Site engineering properties of the soils prior to full-scale remediation design.

The pre-design testing investigation was completed on November 8, 2019. Prior to conducting the pre-design testing investigation, Jacobs prepared a work plan to identify the activities to be accomplished and the methodologies to be used during the investigation (Jacobs, 2019b). The work plan was reviewed and approved by ADEQ in an email dated September 6, 2019. The approved work plan is provided in **Appendix C**.

The activities performed during the pre-design testing investigation between October and November 2019 are summarized as follows:

- Utility Evaluation. The utility evaluation identified utility locations and underground structures that could impact the investigation and/or remedial activities.
- Property Ownership Evaluation and Surveying. A site survey and evaluation were performed to identify property boundaries (completed before the pre-design testing investigation), identify the wash location, and prepare a topographic map of the Site (completed after the pre-design testing investigation).
- Subsurface Soil Investigation.
  - 14 onsite soil borings (borings B11 through B17, B19 through B21, and B23 through B26) were advanced during the pre-design testing investigation to obtain the necessary engineering design parameters (IE moisture content, density, Atterberg limits, etc.) for the full-scale remediation and further define the vertical and lateral extents of contamination. The locations of the pre-design testing investigation borings are shown on **Figure 2-1**. Because the El Paso/Southwest Gas pipeline crosses the Site, borings were prohibited within 10 feet of the high-pressure gas pipeline.
  - 11 offsite soil borings (borings B18, B22, and B27 through B35) were advanced and sampled during the pre-design testing investigation. The primary purpose of the offsite borings was to evaluate background concentrations for lead and arsenic from locations outside the Site and confirm the delineation of vertical and lateral extents of impacts. All borings were analyzed for PAHs and total metals.

2.1 Utility Evaluation

The objective of the utility evaluation was to identify utility locations and potential issues, such as underground structures, that could impact the soil investigation and remedial design. These data are useful to clear boring locations and reveal utility conditions that may need to be addressed during the full-scale remedy. Blue Stake Utility Marking Services was called to locate and mark all functional and abandoned utilities. Utilities were further designated by AZTEC using non-invasive geophysical methods. After the utilities were located, they were surveyed by AZTEC. The utilities at the Site based on the available information and surveys are shown on **Figure 2-2**.

2.2 Property Ownership and Surveying

AZTEC also identified property boundaries based on available Cochise County title information and legal descriptions. The property boundaries, as well as the approximate locations of former MGP structures, are shown on **Figure 2-2**.

2.3 Pre-design Testing Investigation

The objectives of the pre-design testing investigation were to:

- Further evaluate the vertical and lateral extents of contamination at the Site.
- Collect data to evaluate background lead and arsenic levels near the Site.
- Obtain engineering parameters (IE moisture content, density, Atterberg limits, etc.) for use in evaluating treatment options.
- Determine methods of excavation for remedial activities.
- Collect data to complete a human health risk assessment (HHRA) and groundwater protection level (GPL) modeling.
- Evaluate treatment options and select a final remedy.

A description of the sampling locations and associated rationale for the pre-design testing investigation is presented in **Table 2-1**.

2.3.1 Soil Borings

Prior to advancing soil borings, a surface sample was collected at a depth of 1 to 3 inches bgs at all pre-design testing investigation soil boring locations. The top 1 inch of surface debris was removed prior to surface sample collection.

Cascade Drilling Services advanced 25 soil borings during the pre-design testing investigation. Twenty-two shallow borings were advanced up to 25 feet bgs (above groundwater) using a track-mounted 8-inch hollow-stem auger drill rig and three soil borings were advanced 50 feet bgs (below the depth to groundwater) using an 8-inch core barrel with a Sonic 600 SC drill rig. Prior to drilling, all borings were hand cleared for utilities between 5 and 10 feet bgs. A Jacobs field engineer/geologist specified the boring locations based on the proposed locations in the work plan and field conditions and observed the drilling operations. Total boring depth sampling intervals, soil conditions, and materials encountered were recorded by Jacobs personnel for each boring. All pre-design boring depths were referenced to the ground surface elevation at the time of drilling. At the conclusion of drilling activities (week of November 11, 2019), a survey of the boring locations and elevations was performed by AZTEC. The elevations and locations recorded during the survey reflect pre-design ground surface conditions during drilling, but likely differ from historical Site surface elevations due to soil and debris being dumped on the site between 1998 and 2019.

Three groundwater monitoring wells were installed at borings B25, B26, and B27. The remaining shallow soil borings advanced to a total depth above groundwater were backfilled with bentonite grout slurry up to approximately 2 feet bgs, followed by native soil to the existing grade. Soil cuttings from each boring were placed in a roll-off container and securely stored onsite pending laboratory analysis. Waste characterization and disposal are discussed in Sections 2.4 and 7.4.8. Boring and well construction logs are presented in **Appendix D** and **Appendix E**, respectively.

To evaluate background conditions, borings were located offsite. Offsite borings are defined as borings advanced outside the Site extent and boundary of historical MGP operations (**Figure 2-1**) with

benzo(a)pyrene results below residential SRLs. Offsite borings include borings B18, B22, and B27 through B35. Onsite borings are defined as borings advanced inside the Site extent or at locations with benzo(a)pyrene results above the residential SRLs. Onsite borings include borings B11 through B17 and B19 through B26.

The hollow-stem auger drilling technique was used to advance shallow soil borings with total depths ranging from 15 to 25 feet bgs. Samples were generally collected at 0, 2.5, 5, 7.5, 10, 15, and 20-foot intervals at onsite locations and at 0, 5, 10, 15, and 20-foot intervals at offsite locations.

The shallow soil borings include the following:

- Boring B11 – Advanced at the location of the former south gas holder to a depth of 20 feet bgs to evaluate the vertical extent of the MGP-related contamination near the former south gas holder.
- Boring B12 – Advanced at the location of the former north gas holder to a depth of 25 feet bgs to evaluate the vertical extent of the MGP-related contamination near the former north gas holder.
- Boring B13 – Advanced at the location of the former meter house to a depth of 20 feet bgs to evaluate the vertical extent of the MGP-related contamination near the former meter house.
- Boring B14 – Advanced at the location of the east end of the former generator house to a depth of 20 feet bgs to evaluate the vertical extent of the MGP-related contamination near the former generator house.
- Boring B15 – Advanced at the location of the north end of the former generator house to a depth of 15 feet bgs to evaluate the vertical extent of the MGP-related contamination near the former generator house.
- Boring B16 – Advanced at the location of the former oil sump to a depth of 20 feet bgs to evaluate the vertical extent of the MGP-related contamination near the former oil sump.
- Boring B17 – Advanced west of the location of the former purifiers to a depth of 20 feet bgs to evaluate the vertical extent of former MGP-related contamination near previously sampled locations PURS32/PURS42.
- Boring B18 – Advanced northeast of the Site to a depth of 15.5 feet bgs to evaluate background metals and horizontal extent of former MGP-related contamination northeast of the Site.
- Boring B19 – Advanced on the northwest side of the former debris and cinder pile to a depth of 20 feet bgs to evaluate the vertical and horizontal extents of former MGP-related contamination at the debris and cinder pile.
- Boring B20 – Advanced to the north of the former debris and cinder pile to a depth of 20 feet bgs to evaluate the horizontal extent of former MGP-related contamination near the debris and cinder pile.
- Boring B21 – Advanced to the north of the previous investigation SS-5 location to a depth of 25 feet bgs to evaluate the horizontal extent of former MGP-related contamination near the SS-5 location.
- Boring B22 – Advanced to the south of the previous investigation SS-10 location to a depth of 15.5 feet bgs to evaluate background metals concentrations and the horizontal extent of former MGP-related contamination near the SS-10 location.
- Boring B23 – Advanced to the east of the previous investigation SS-14 location to a depth of 20 feet bgs to evaluate the horizontal extent of former MGP-related contamination near the SS-14 location.

- Boring B24 – Advanced west of the location of the former purifiers to a depth of 20 feet bgs to evaluate the horizontal extent of former MGP-related contamination east of the former purifiers.

- Boring B25 – Advanced west of the debris and cinder pile to a depth of 50 feet to evaluate the horizontal extent of MGP-related contamination in soil and potential impacts to groundwater. A groundwater well was installed at this location and screened from 25 to 45 feet bgs.

- Boring B26 – Advanced south of the gas holders to a depth of 50 feet to evaluate the horizontal extent of MGP-related contamination in soil and potential impacts to groundwater. A groundwater well was installed at this location and screened from 25 to 45 feet bgs.

- Boring B27 – Advanced southwest of the Site to a depth of 50 feet to evaluate background metals concentrations in soil and groundwater. A groundwater well was installed at this location and screened from 22 to 42 feet bgs.

- Boring B28 – Advanced southwest of the Site to a depth of 20 feet bgs to evaluate background metals concentrations near the Site.

- Boring B29 – Advanced south of the Site to a depth of 21 feet bgs to evaluate background metals concentrations near the Site.

- Boring B30 – Advanced northeast of the Site to a depth of 20 feet bgs to evaluate background metals concentrations near the Site.

- Boring B31 – Advanced north of the Site to a depth of 21 feet bgs to evaluate background metals concentrations near the Site.

- Boring B32 – Advanced north of the Site to a depth of 21 feet bgs to evaluate background metals concentrations near the Site.

- Boring B33 – Advanced north of the Site to a depth of 21 feet bgs to evaluate background metals concentrations near the Site.

- Boring B34 – Advanced northwest of the Site to a depth of 21 feet bgs to evaluate background metals concentrations near the Site.

- Boring B35 – Advanced west of the Site to a depth of 21 feet bgs to evaluate background metals concentrations near the Site.

The sonic drilling method was used to advance soil borings B25, B26, and B27 up to 50 feet bgs and into the groundwater. These borings were advanced to assess the lateral and vertical extents of potential soil contamination, evaluate background lead and arsenic concentrations near the Site, and assess potential MGP-related impacts to groundwater. Groundwater wells were installed at two onsite locations (B25 and B26) and one offsite location (B27) in November 2019. Soil samples were collected at 0, 2.5, 5, 7.5, 10, 15, 20, 30, and 40-foot intervals at the sonic boring locations, and groundwater wells were installed and screened from 25 to 45 feet bgs. Section 2.3.2 provides the details of well installation, development, sampling, and groundwater sampling results.

2.3.1.1 Soil Results

Soil samples were collected from the soil borings for environmental analysis in accordance with the work plan (Jacobs, 2019b). All soil samples were submitted to Xenco Laboratories (ADHS No. AZ0757) in Phoenix, Arizona, and analyzed at Xenco's Texas facility for the following:

- PAHs using EPA Method 8270D-SIM
- Total metals using SW6020/7471B

Samples collected at pre-determined locations were also analyzed for the following:

- VOCs using EPA 8260B (select sample locations)
- Fraction of organic carbon (foc) (ASTM D2974; included with geotechnical results; **Table 2-2**)

All samples collected in October and November 2019 were analyzed for PAHs and metals, with select sample locations also analyzed for VOCs based on the Site history. Soil sample analytical results for PAHs, metals, and VOCs are provided in **Tables 2-3, 2-4,** and **2-5**, respectively. Laboratory analytical reports are presented in **Appendix G**. The data quality evaluation of the analytical results is presented in **Appendix H**. The previous locations of SRL exceedances for PAHs and arsenic are shown on **Figures 1-5** and **1-7**, respectively. The locations of SRLs exceedances for PAHs and metals during the pre-design testing investigation are shown on **Figures 2-3** and **2-4**, respectively. All soil VOC results were below the residential soil SRLs.

Soil PAHs

Concentrations of PAHs exceeded residential and/or non-residential SRLs in 25 samples collected from 9 boreholes (B-11 through B-13, B-15 through B-17, B-20, B-21, and B-24). PAH results from samples collected from offsite borings (B-18, B-22, and B-27 through B-35) were below the residential SRLs. Soil borings that did not have PAH results above the residential SRL and that are located outside the Site extent based on historical MGP operational data are classified as offsite locations. Offsite locations include borings B-18, B-22, B27, B-28, B-29, B-30, B-31, B-32, B-33, B-34, and B-35. The PAH analytical results compared to their respective SRLs, if applicable, are shown in **Table 2-3**. The boring locations and PAH results above the SRLs are shown on **Figure 2-3**.

PAH soil results from the deeper borings (B-25 through B-27) were all below the residential SRL.

PAH analytical results above the residential SRLs from onsite borings are summarized next.

Benzo(a)pyrene was detected above the residential SRL of 0.69 mg/kg in 25 samples and above the nonresidential SRL of 2.1 mg/kg in 14 samples collected from 9 borings. Boring B-13 had the highest benzo(a)pyrene result of 28.9 mg/kg from 1 to 1.5 feet bgs, and boring B-12 had the deepest benzo(a)pyrene result of 1.38 mg/kg (above the residential SRL) from 19.5 to 20 feet bgs. The following table includes the deepest sampled depth, deepest result greater than the residential SRL, and deeper results less than the residential SRL. Because benzo(a)pyrene has had the highest concentrations above SRLs at all borings where detections have been above the SRLs, benzo(a)pyrene has been used as an indicator compound. Borings with results above the residential benzo(a)pyrene SRL are listed in the following table:

Boring	Total Sampled Depth (feet bgs)	Deepest Result > Residential SRL	Deepest Result < Residential SRL
B-11	20	3	5.5
B-12	25	20	25
B-13	20	10.5	15.5
B-15	15	8	10.5
B-16	20	8	10.5
B-17	20	10.5	15.5
B-20	20	5.5	8
B-21	25	15.5	20
B-24	20	15.5	20

Soil Lead and Arsenic

Arsenic was detected in all 25 borings advanced during the pre-design testing investigation. Concentrations of arsenic exceeded the residential and nonresidential SRL of 10 mg/kg in 123 samples collected from 25 boreholes, with concentrations ranging from 10.3 to 50.3 mg/kg.

Lead was detected above the residential SRL of 400 mg/kg in two samples collected at borings B11 and B12 (samples B11-2.5-3.0 and B12-7.5-8.0), with results of 420 mg/kg and 531 mg/kg, respectively. Due to the elevated lead concentrations, these samples were analyzed for TCLP metals for waste profiling.

Arsenic and lead data from offsite borings B-18, B-22, and B-27 through B-35 have been used to evaluate background arsenic and lead concentrations near the Site. In Section 5, the methodology and results of the statistical evaluation are discussed. The metals analytical results compared to their respective SRLs, if applicable, are shown in **Table 2-4**. The locations and concentrations of arsenic onsite and offsite and concentrations of lead onsite are shown on **Figure 2-4**.

2.3.1.2 Geotechnical Analysis

Select samples were analyzed for geotechnical parameters during the pre-design testing investigation in October and November 2019. Laboratory tests to determine pertinent index and engineering properties were performed by Hoque & Associates in Phoenix, Arizona. The purpose of the index testing program was to classify soil in areas potentially needing excavation and aid in developing engineering parameters for the materials.

Samples were analyzed using the following geotechnical tests:

- Moisture content (ASTM D2216)
- Sieve analysis (percent passing No. 200)
- Atterberg limit (plastic limit, liquid limit, plasticity index)
- In situ density
- Undrained shear strength
- Dry bulk density (ASTM C128)
- Specific gravity (ASTM D854)

In addition, foc was analyzed by Xenco Laboratories and included with the geotechnical testing. A summary of the geotechnical test results is presented in **Table 2-2**, and geotechnical laboratory results are included in **Appendix F**.

2.3.2 Groundwater Well Installation and Results

Cascade Drilling advanced borings D-MW25, D-MW26, and D-MW27 to 50 feet bgs using a rotosonic drill rig and 8-inch core barrel. Monitoring wells D-MW25, D-MW26, and D-MW27 were installed at borings B25, B26, and B27 on November 1, 3, and 4, respectively. All wells were installed at the same depths and used the same well construction. Each well was screened from 25 to 45 feet bgs using 4-inch-diameter schedule 40 polyvinyl chloride with a 0.010 inch screen slot size. A filter pack was installed around each screen from 22 to 50 feet bgs. A bentonite seal was installed and hydrated for at least 30 minutes from 20 to 22 feet, followed by the addition of cement grout from 0 to 20 feet bgs. An above-grade lockable steel monument was set in a 2 by 2-foot concrete pad completion.

Cascade developed monitoring wells D-MW25, D-MW26, and D-MW27 on November 5 and 6, 2019, with a well development rig within a week of installation, using a combination of bailing, surging, bailing, and pumping. The bentonite and cement grout seals were allowed to set overnight prior to well development. To begin development, the well was bailed to remove sediment that had settled within it during installation. After sediment removal, the well was surged using a surge block for a minimum of 20 minutes at 10-foot intervals along the 20-foot well screen to draw fine sediment out of the adjacent annular space and formation and into the well. After surging, the well was again bailed to remove any sediment generated. Finally, the well was pumped with a submersible pump for at least an hour, which was

sufficient to reduce groundwater well turbidity to below 5 nephelometric turbidity units. Both well depth and the firmness of the well bottom were monitored with a tag line throughout development to track the amount of sediment present and verify its removal during bailing. During pumping, groundwater parameters, including temperature, specific conductance, dissolved oxygen, pH, and oxidation-reduction potential, were monitored with a water quality meter by a Jacobs geologist. Well construction diagrams and development logs are provided in Appendix E

2.3.2.1 Monitoring Well Sampling

Groundwater samples were collected after well development at monitoring wells D-MW25, D-MW26, and D-MW27 using a new disposable bailer at each well. Wells were allowed to equilibrate for approximately 24 hours prior to sample collection. Groundwater samples were collected directly from the bailers. One duplicate sample was collected from monitoring well D-MW27 (D-FD01-110719). Collected groundwater was transferred to appropriate sample containers, placed in an iced cooler, and submitted to Xenco Laboratories for laboratory analysis for the following parameters:

- PAHs using EPA Method SW846 8270D-SIM
- Total Recoverable Metals using EPA Method 200.8/245.1
- VOCs using EPA Method SW846 8260C

2.3.2.2 Groundwater Results

All groundwater results for PAHs and metals were below the Arizona Aquifer Water Quality Standard (AWQS). All groundwater results for VOCs were below the AWQS, with the exception of trichloroethene (TCE), which was reported at all three wells.

PAHs

Based on groundwater results, groundwater has not been impacted by PAHs or former MGP-related soil impacts. Groundwater wells MW-25 (boring B-25), MW-26 (boring B-26), and MW-27 (boring B-27) had groundwater results below the laboratory reporting limits and the AWQS and soil results were below the PAH residential SRLs. PAHs are not considered COCs in groundwater.

Metals

All groundwater metal results were below the AWQS; therefore, metals are not considered COCs for groundwater at the Site.

The three groundwater samples collected had arsenic results ranging from 0.00466 to 0.0068 mg/L. All groundwater arsenic results were below the AWQS arsenic standard of 0.05 mg/L. Arsenic is not considered a COC for groundwater.

VOCs

Groundwater samples collected from groundwater wells MW-25 (boring B-25), MW-26 (boring B-26), and MW-27 (boring B-27) had TCE results of 0.0129, 0.0780, and 0.0688 mg/L, respectively, above the AWQS of 0.005 mg/L. 1,1-Dichloroethene and toluene also were detected and were below the AWQS. TCE concentrations in groundwater are not a Site COC for the following reasons:

- Chlorinated VOCs are not a COC for former MGP sites (GRI, 1996).

- MGP operated at the site from approximately 1903 to 1932, which pre-dates the development and use of chlorinated VOCs in the United States in the 1950s.

- Toluene results above the laboratory reporting limit ranged from 0.00224 to 0.00792 mg/L. Based on the groundwater gradient (discussed in Section 2.3.2.3), upgradient underground tanks containing

gasoline/BTEX sources (including toluene) were reported in the EDR report. A conditionally exempt small quantity generator also is located generally upgradient.

2.3.2.3 Groundwater Gradient

Depth-to-water measurements were collected at all monitoring wells on November 7, 2019, approximately 24 hours after wells were development and prior to groundwater sampling, with results of 26.48, 28.79, and 29.38 feet below top of casing at wells MW-25, MW-26, and MW-27, respectively. On November 12, 2019, Aztec performed a survey of the groundwater well locations. The top of casing of each well was surveyed using the North American Vertical Datum of 1988, with results of 3945.0102, 3949.1597, and 3947.1868 feet above mean sea level for wells MW-25, MW-26, and MW-27, respectively. Groundwater elevations at the Site were calculated by subtracting distance from groundwater to the top of casing from the surveyed top of casing elevation. The resulting groundwater direction is approximately toward the west-southwest, with a 0.008-foot-per-foot gradient. Groundwater flow is shown on **Figure 2-5**.

2.3.3 Decontamination

The split-spoon samplers and sampling sleeves were decontaminated prior to use and between sampling locations. Samplers and sleeves were scrubbed using Alconox® and distilled water, followed by a distilled water rinse. Samplers were allowed to air dry prior to use. The drilling augers and core barrels were pressure-washed prior to drilling at each boring location.

Two equipment blanks, D-EB01-102919 and D-EB01-110219, were collected from the split-spoon samplers and sleeves at both the auger drill rig and the sonic drill rig, respectively, and analyzed for PAHs, metals, total VOCs (BTEX was included in total VOCs). All results were below the laboratory RL except for barium. Barium was detected at 0.00711 mg/L from the equipment blank collected on October 29, 2019. The Arizona water quality standard (drinking water protected use) for barium is 2 mg/L.

2.4 Waste Characterization from Soil Sampling Activities

Soil cuttings generated from the soil borings were placed in a lined roll-off container equipped with a locking lid. After all soil cuttings had been placed into the bin, a four-point composite sample (D-BIN-110719) was collected from the roll-off on November 7, 2019, and submitted to Xenco Laboratories for analysis. The bin and soil cuttings remained onsite pending analytical results, with a “Pending Laboratory Analysis” label on the bin that identified the bin contents, date of generation, and contact information. Upon receipt of the waste characterization results, the soil was profiled by APS and is pending approval for disposal at the Marana Regional Landfill in Marana Arizona; manifests will be included in **Appendix I** upon disposal.

Groundwater produced during well development and decontamination water were stored in three 300-gallon polyethylene tote containers. Groundwater produced during well development remains onsite pending analytical results for profile approval and disposal.

Used, disposable personal protective equipment (PPE) and used disposable equipment were bagged and included with the drilling consumable trash. These wastes were not considered hazardous and were sent to a municipal landfill.

During the investigation, waste characterization soil samples were collected from the ground surface to a depth of 5.5 feet bgs at various locations and analyzed to identify proper waste disposal during the remedial activities. Samples were submitted to Xenco Laboratories and analyzed for the following:

- PAHs using EPA Method SW846 8270D-SIM
- Total RCRA 8 Metals using EPA Method 6020/7471B
- TCLP RCRA metals using EPA Method (6010C/7470A)
- Total VOCs using EPA Method 8260C
- Polychlorinated biphenyls (PCBs) using EPA Method 8082A
- Paint filter using EPA Method 9095B (for liquid/saturated samples)

- Ignitability SW846 1010
- pH using EPA Method 9045C (for liquid samples)
- Total cyanide using EPA Method 9012

During the investigation, a small amount of black matter similar in appearance to tar was observed in the drill cuttings at borings B-12 and B-30 at 5 feet bgs. The tar-like matter was collected in a laboratory-provided sample jar, submitted to Xenco Laboratories as sample D-TAR-01, and analyzed for VOCs, TCLP metals, and TCLP VOCs. All results from the tar sample were below the laboratory RLs with the exception of barium, which had a TCLP result of 1.35 mg/L. A summary of waste characterization results for soil and water is provided in **Table 2-9** and **Table 2-10,** respectively.

2.5 Known Extents of Site Impacts

The extents of impacted soil and groundwater at the Site are discussed in the following sections. Information from previous investigations (Section 1) and data from the pre-design testing investigation were used for the evaluations and area discussed in this section. Depths of impacts are based on the depth from the ground surface at the time of pre-design testing investigation sampling and are represented by the topographical survey performed during the week of November 11, 2019. The topographical survey was conducted immediately after the sampling activities in the pre-design testing investigation. The ground surface elevation may differ between historical MGP operations, previous investigations, and pre-design testing investigation activities.

As described in Sections 1.4 and 1.5, the historical accumulation and subsequent removal of surface soil between 1998 to 2019 has altered the Site surface conditions. It is likely that the surface conditions existing during the 1998 investigation did not exist in 2019. Therefore, the surface sampling data collected during the pre-design testing investigation and the subsurface data from the previous investigations and pre-design testing investigation will be primarily relied upon to evaluate potential former MGP-related impacts. In addition to the pre-design testing investigation samples collected inside the known Site extent, offsite borings were advanced to evaluate background metals concentrations and potential MGP-related impacts. In areas where exceedances of residential SRLs existed in 1998, follow-up sampling was conducted in 2019 and is discussed in this section.

2.5.1 Soil Detections

Available data indicate the potential impacts to soil from former MGP operations are generally limited to the upper 15 feet of soil, with one sample result above the residential SRL for benzo(a)pyrene at 19.5 to 20 feet bgs. During the pre-design testing investigation, a definitive layer of lamp black material was not observed, though it is sometimes seen at former MGP sites; however, thin black lines approximately 1 millimeter thick and up to 15 millimeters long of potential MGP material were observed between 2.5 to 10 feet bgs at the onsite boring locations. Historical reports from the 1990s have limited subsurface boring data; however, boring SB-4 had a benzo(a)pyrene concentration of 4.5 mg/kg at 3 to 4.5 feet bgs. In soil boring B17 (near SB-4), the pre-design sampling result for benzo(a)pyrene was 5.31 mg/kg at 2.5 to 3 feet bgs, confirming a benzo(a)pyrene concentration is above the non-residential SRL at this location. Lead was reported above the residential SRL at 2.5 to 3 feet bgs (420 mg/kg) in boring B11 and at 7.5 to 8 feet bgs (531 mg/kg) in boring B12 during the pre-design testing investigation. Arsenic was above the SRL in the majority of the borings, both onsite and offsite, without strong variability. A statistical evaluation of background lead and arsenic concentrations is provided in Section 5. Location specific impacts are discussed next. A correlation was not observed between lead and arsenic or between PAHs and lead and arsenic, meaning the highest lead and arsenic concentrations did not correspond to the highest PAH concentrations.

PAHs

PAHs in soil were observed primarily at and around the former gas holders and meter house locations and along the north extent of the Site. The only previous investigation soil boring with a reported PAH result above the residential SRL was SB-4, with a result of 4.5 mg/kg benzo(a)pyrene at 0 to 1.5 feet bgs. Soil boring SB-4 was also sampled at 3 to 3.5 and 9 to 10.5 feet bgs, with results below the laboratory

reporting limit of 0.017 mg/kg. The SB-4 boring was located between the meter house and north gas holder next to the 2019 boring B-17. The highest PAH concentration was reported at the former meter house location (boring B-13), with a benzo(a)pyrene result of 28.9 mg/kg from 1 to 1.5 feet bgs. PAH concentrations were detected above the residential and/or non-residential SRLs at the former gas holders and meter house locations. The deepest PAH concentration of 1.38 mg/kg benzo(a)pyrene was detected at 20 feet bgs at the north gas holder location.

North of the Site, PAH concentrations have been defined north of the wash at borings B-31, B-32, B-33, and B-34. Detections in these borings were below the residential SRLs for PAHs. The extent of PAHs at the wash have not been defined.

East of the Site, PAH concentrations extended to 15.5 feet bgs at boring B-24, with a benzo(a)pyrene result of 0.877 mg/kg, and a maximum benzo(a)pyrene concentration of 1.22 mg/kg at 10.5 feet bgs. The eastern extent of PAH-impacted soil has not been defined; however, the northeast and southeast extents of impact have been defined and MGP operations did not extend farther east beyond the B-24 soil boring location.

South of the Site, PAH concentrations have been defined south of the southern former gas holder. Detections in borings B-26, B-22, and B-28 were below the residential SRLs for PAHs. Also, detections in borings B-29 and B-27 south of the southern Site fence line are below all residential SRLs for PAHs.

West of the Site, PAH concentrations have been defined. Detections in borings B-19, B-25, B-18, and B35 were below the residential SRLs for PAHs.

VOCs

Soil samples were analyzed for BTEX during the previous investigations and VOCs were analyzed during the pre-design testing investigation. BTEX was not detected in Site soil during the previous investigations; however, a sludge sample was collected for waste disposal purposes from the former oil sump prior to the sump's removal. The result for total xylenes was 180 micrograms per liter. During the previous investigations, soil samples were not collected after removal of the former oil sump, so during pre-design testing investigation, soil samples were collected and analyzed for total VOCs at the former oil sump location (boring B-16) at 2.5, 5, 7.5, 10, 15, and 20 feet bgs. All VOC results were below the residential VOC SRLs and the laboratory RLs.

Boring B-13 (former meter house location) was the only location with VOC results above the laboratory RLs, as well as detections below the residential SRLs at 1.5 and 3 feet bgs. VOCs detected at 1.5 feet bgs included benzene (0.509 mg/kg), naphthalene (28.3 mg/kg), toluene (0.38 mg/kg) and total xylenes (0.33 mg/kg). A naphthalene result of 10.5 mg/kg was also reported at 3 feet bgs. All the results are below the residential SRLs. Therefore, VOCs in soil are not considered to be Site chemicals of concern (COCs).

Metals

Soil samples were analyzed for total metals during previous investigations and the pre-design testing investigation. During previous investigations, lead was detected at concentrations above the non-residential SRL at SS-6 and SS-7 locations. These areas were subsequently excavated and sampled again, with lead concentration results below the residential SRL for lead. Borings advanced during the pre-design testing investigation at the former gas holders (near the SS-6 location) had lead results of 420 mg/kg at 2.5 feet bgs and 531 mg/kg at 7.5 feet bgs at borings B-11 and B-12, respectively, which are above the residential lead SRL. The remaining lead results were below the residential lead SRL of 400 mg/kg. Lead results at nearby borings B-13, B-24, and B-26 were below the residential SRL, indicating the lead-impacted soil was confined to the area under the former gas holders. Lead is included as a COC for the decision units (DUs) around the former gas holder areas where lead was detected above the residential SRL.

Arsenic concentrations in soil were detected above the residential and non-residential SRL of 10 mg/kg in most of the sampling results from the previous investigations and the pre-design testing investigation. In general, arsenic detections in the City area resulting from historical smelter operations are reported above the arsenic SRL (based on historical arsenic data for the City area [ATSDR, 1995]). Therefore, an evaluation of background arsenic concentrations, statistically comparing offsite and onsite concentrations at the 0 to 5, 5 to 10, 10 to 15, and 15 to 20 foot bgs intervals, was performed and is included in Section 3. Based on the statistical evaluation, onsite arsenic concentrations were similar to offsite (background) arsenic concentrations. Therefore, arsenic is not considered a COC at the Site.

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3. Statistical Evaluation of Arsenic and Lead

ADEQ VRP approved the work plan for the additional investigation in September 2019 and requested APS to evaluate the background metals at the site through the use of the Gilbert Toolbox (Neptune and Company Inc., 2009) instead of a UTL95/95. The Gilbert Toolbox consists of the *t*-test, Wilcoxon rank sum test, quantile test, and slippage test. APS conducted the evaluation using the *t*-test, Wilcoxon rank sum test, and quantile test, which are discussed in this section. The slippage test has a high power for very large data sets and was not used.

The methods used to evaluate the statistical properties of metals (arsenic and lead) concentrations in soil samples collected from background and onsite at the Site also are described in this section. Lead and arsenic were included as smelter byproducts and detected at levels greater than the residential SRLs in soil samples (ATSDR, 1995). The statistical process was used to develop data sets representative of background metals concentrations. The evaluation of the data with regard to combining data sets by soil location and depth, developing descriptive summary statistics for each metal, and comparing onsite data with background are discussed in this section.

3.1 Data Conditioning

For metal/location combinations with duplicate sample results, both the parent sample and duplicate were used for statistical analyses. Although averaging parent sample and duplicate sample results may reduce sample variability, soil samples represent a point measurement with a small representative elementary volume, and based on the heterogeneous nature of the subsurface, each sample likely is a discrete result.

The concentrations of arsenic and lead were all above detectable levels with no censored observations. Estimated concentrations (concentrations denoted with the "J" qualifier) were treated as qualified detected concentrations for the purposes of statistical analysis. No data rejected through analytical data validation were identified in the data sets; therefore, no data were rejected from the data sets used for statistical evaluation.

3.2 Graphical Presentation of the Data

The data were plotted to allow for visual evaluation of the data for each metal for each sample type. Graphical presentations of the data provide insight into data sets that are not possible to visualize and understand by reviewing test statistics. The statistical plotting methods used include index plots, box-and-whisker plots, histograms, and probability plots. Graphical presentations of the data are provided in **Appendix J, Attachments J-1** through **J-4**.

Box-and-whisker plots (referred to as box plots) show the central tendency, degree of symmetry, range of variation, and potential outliers of a data set. The upper value of the box represents the 75th percentile for the data and the lower value of the box is the 25th percentile for the data. Thus, 50 percent of the data fall within the box. The top of the whisker represents the 75th percentile plus 1.5 times the interquartile range (IQR), where the IQR is the 75th percentile minus the 25th percentile. The bottom of the whisker is the 25th percentile minus 1.5 times the IQR. Any value outside this range is considered a potential statistical outlier, which is represented by a dot on the plot. The outlying concentrations of box plots only serve the definition of falling relatively far from the middle 50 percent of the data. If the data are drawn from a highly skewed distribution, or a symmetrical one with long tails, multiple outliers of this type are expected.

Normal probability plots show the ordered sample results versus the corresponding quantiles of a theoretical data distribution, such as the normal distribution, and are described as a quantile-quantile, or Q-Q plot (normal Q-Q plot). Because quantiles are associated with cumulative probabilities, Q-Q plots are also referred to as probability plots. A normal probability plot is used to evaluate the normality of the distribution of a variable (that is, whether, and to what extent, the distribution of the variable follows the normal distribution). If the data are not normally distributed, they will deviate systematically from a straight

line. Variability in the data will cause the data to scatter randomly around this line, but the data will still appear to follow a single straight line. Outliers may also be evident in this plot.

A histogram is a visual representation of the data collected into groups. The data range is divided into several bins or classes and the data are sorted into the bins. A histogram is a bar graph conveying the bins and the frequency of data points in each bin. Histograms provide a visual method of accessing location, shape, and spread of the data; the shape of a histogram helps determine whether the distribution is symmetric or skewed. The visual impression of a histogram is sensitive to the number of bins selected. A large number of bins will increase data detail, while fewer bins will increase the smoothness of the histogram.

Color-coded index plots provide added insight about outliers and patterns of multiple groups potentially present in a data set. Index plots are created by plotting the concentration on the horizontal axis and the sample index number on the vertical axis, where each sample index number represents a different sample location.

3.3 Descriptive Statistics

Soil samples were collected from 25 soil boring locations (11 background borings and 14 onsite borings) at depths of up to 40 feet bgs. In this evaluation, only samples collected from depths of up to approximately 20 feet bgs were considered.

The analytical results for the soil samples are provided in **Appendix G**, with metals results listed in **Table 2-4**. Descriptive statistics for each metal are provided in **Appendix J**, **Table J-1** (arsenic) and **Table J-2** (lead). Statistics are provided by borehole location and include the total number of samples, number of detected results, and frequency of detection; the minimum and maximum concentrations for detected and non-detected observations; the mean, median, and standard deviation; and the distribution characteristics of each metal. These statistics also include the normality probabilities that the concentrations came from normal distributions as calculated by the Shapiro-Wilk test. When the Shapiro-Wilk probability is less than 0.05, the assumption of normality is rejected. Profiles of arsenic and lead concentrations in soil versus depth were plotted in **Appendix J**, **Figure J-1** to evaluate the vertical distribution of each metal in soil for each of the 25 boreholes. Different colored symbols represent the two metals.

3.4 Determination of Soil Groupings

This section discusses the evaluation of the data with regard to combining data sets by soil location and depth. Depth was defined based on 5-foot vertical intervals, using the beginning sample interval as the nominal soil sample location. This resulted in four depth intervals: 0 to 5 feet bgs; 5 to 10 feet bgs; 10 to 15 feet bgs; and 15 to 20 feet bgs. If no significant differences in background concentrations exist between soil location and depth, concentrations can be pooled together to compute the background summary statistics.

To determine whether soil locations and soil depths should be combined, analysis of variance (ANOVA) was used to establish whether significant differences exist among soil locations and soil depths. ANOVA is a technique designed to determine whether the mean values of multiple groups are statistically different from one another. Environmental data are often not normally distributed but follow skewed distributions. Thus, a nonparametric ANOVA, using the ranks of the data, as opposed to the concentrations themselves, was used for evaluating the data. Side-by-side box plots and overlapping probability plots were also used to graphically compare the concentrations of metals between the data groups. These graphical displays are provided in **Appendix J, Attachments J-2** and **J-3**.

Appendix J, Table J-3 summarizes the ANOVA performed on arsenic and lead concentrations from the background data and the onsite data. This ANOVA (referred to as two-way ANOVA) studied both soil location and depth simultaneously. The calculated p-values (probabilities that the observed differences between the soil locations or depths could be due to random variability) are provided in this table. This p-value was compared to a significance level of 0.05 (the most common significance level in most statistical works), which limits the potential false conclusion that the populations are not different (when

they are) to 5 percent. If the p-value for the comparison by soil location or depth was less than 0.05, the soil locations or depths, respectively, were considered to be significantly different. Otherwise, they were determined to be statistically similar to one another.

For arsenic, there is no significant difference in background concentrations by soil depth, but concentrations are different by location (p-value of 0.018). Background concentrations of lead are significantly different by soil depth (p-value of less than 0.001) but not soil location. For comparison, concentrations of arsenic and lead in onsite soil are significantly different by both soil location (p-values of 0.012 and less than 0.001, respectively) and depth (p-values of less than 0.001). Overall, the p-values for soil depth are lower than the p-values for location in most cases, indicating that the differences between soil depth are typically more significant than the differences between locations for each group (background and onsite). However, onsite concentrations of lead appear strongly influenced by both soil location and depth.

For this reason, subsequent analysis was performed to determine which soil depth intervals are significantly different. The Kruskal-Wallis one-way ANOVA was used for this comparison. The Kruskal-Wallis test is a nonparametric method for testing whether samples from more than two groups originate from the same distribution. To determine which groups are different from the others, post-hoc testing was conducted using the Dunn test (Dunn, 1964; Zar, 2010). When performing a large number of statistical tests, some p-values less than the typical significance level of 0.05 will occur purely by chance, even if all the null hypotheses are true. Thus, the Benjamini-Hochberg procedure (Benjamini and Hochberg, 1995) was used to control the family-wise error rate in the pairwise comparisons.

Appendix J, Table J-4 summarizes the results of the Kruskal-Wallis test. Similar to the two-way ANOVA results, there is no significant difference in background arsenic concentrations by soil depth. Background lead concentrations appear to be higher in the 0- to 5-foot depth interval compared to deeper soil depths. For Site soil, arsenic and lead concentrations appear to be higher in the 0- to 5-foot and the 5- to 10-foot depth intervals.

3.5 Onsite Concentration to Background Comparisons

Tests of central tendency (two-sample hypothesis tests) were performed to determine with statistical confidence whether arsenic and lead concentrations in each onsite soil depth interval are different, on average, from background concentrations.

The appropriate type of central tendency comparison test was determined based on the statistical distribution of the two data sets being tested. For cases where both data sets appear to be normally distributed, a *t*-test was performed to determine whether the means of the two populations appear to be different from one another. The specific form of *t*-test (Student's *t*-test or Welch's *t*-test) was determined based upon whether the variances of the data sets could be considered equal. If the distributions of the data sets did not coincide or if they were both nonparametric, then the nonparametric Wilcoxon Rank Sum test was used for comparison of central tendency. This is a nonparametric version of a two-sample *t*-test and calculates whether the medians of the two distributions are different or similar. Because the nonparametric Wilcoxon Rank Sum test assumes equal variance, when this assumption was not satisfied, the data were compared using the two-sample Kolmogorov-Smirnov test. The two-sample Kolmogorov-Smirnov test is a nonparametric method that compares the cumulative distributions of two data sets.

Because the nature of the potential impact at the Site is unknown, the quantile test was used in conjunction with the central tendency test. This test focuses on comparing the right tails of the Site and background distributions instead of comparing the medians or means of the two distributions. The quantile test is appropriate to address localized impacts compared to site-wide impacts. The quantile test was performed using the 80th percentile.

To supplement the formal statistical comparisons, overlapping probability plots comparing the quantiles of the background and site-specific data against each other are provided in **Appendix J, Attachment J-4**. This attachment also includes stacked histograms and side-by-side box plots comparing background and

site-specific data for each metal. **Appendix J, Table J-5** presents results of the central tendency and quantile tests conducted by soil depth for each metal.

Comparisons were performed using a common null hypothesis that concentrations of arsenic or lead in the onsite sample population are less than or equal to background concentration levels. The tests were conducted using a significance level of 0.05 (corresponding to a 95% confidence level). If the calculated probability (p-value) from a test is below 0.05, a conclusion is drawn to reject the null hypothesis and, instead, determine that a significant test result exists. In these tests, a p-value is calculated that is essentially the probability that the observed differences between the centers of the two sample sets occurred merely due to random variability in the data, or whether those differences are an indication that the center of the Site population is greater than background.

Based on a comparison of onsite and offsite statistical results detailed in the sections above, onsite concentrations appear to be consistent with background concentrations.

4. Human Health Risk Assessment

An HHRA was completed to assess the current and potential future cancer risks and noncancer hazards associated with exposures to surface and subsurface soil (0 to 15 feet bgs), deep soil (> 15 feet bgs), and groundwater at the Site to support remedial action decisions for the Site. Risks are estimated for residential and commercial/industrial (non-residential) exposure scenarios for soil and a residential exposure scenario for groundwater to reflect possible future site uses.

4.1 Human Health Risk Assessment Approach

For purposes of this risk assessment and to support risk management decision making, potential onsite receptors are assumed to be exposed to HHRA chemicals of potential concern (COPCs) in soil and groundwater under current and potential future land use conditions. The Site has been owned by the City since 1987 and is crossed by an El Paso Natural Gas easement. As described in Section 1, an IRA was conducted in 1996 to remove the majority of the impacted surface soil. Although the City does not use the property, construction debris consisting of soil, gravel, asphalt, and concrete has been dumped on the property. Prior to the 2019 site investigation activities, the City removed the dumped construction debris from the Site. The compounds potentially related to the former MGP operations and existing subsurface features have impacted the soil at the Site were evaluated during the 2019 pre-design testing investigation. Therefore, the exposure scenarios in this HHRA assume that a final remediation action has not been completed, and no institutional controls (ICs) have been implemented.

Standard-of-practice risk assessment methods and default exposure assumptions were used in the HHRA to develop exposure scenarios for the Site. The HHRA was performed in accordance with ADEQ risk assessment protocols (ADEQ, 2009, 2018), ADHS's *Deterministic Risk Assessment Guidance* (ADHS, 2003), EPA risk assessment guidance (Risk Assessment Guidance for Superfund Parts A, B, C, E, and F; EPA, 1989, 1991a, 1991b, 2004, 2009), and ASTM Risk-Based Corrective Action Guidance (ASTM, 1998).

The following four steps of the risk assessment are discussed in this section:

1. Data evaluation
2. Exposure assessment
3. Toxicity assessment
4. Risk characterization

4.1.1 Step 1: Data Evaluation

In the first risk assessment step, an HHRA data set of soil sampling results was compiled for each depth group: surface and subsurface soil (0 to 15 feet bgs) and deep soil (> 15 feet bgs). Soil samples for each depth group were evaluated separately for onsite and background (offsite) areas.

Analytical data collected during the pre-design testing investigation in 2019 at the Site were used in the HHRA. The soil and groundwater sample locations included in the analytical data set are presented on **Figure 2-2**. A list of soil and groundwater samples used in this HHRA is presented in **Tables K-1** and **K-2** in **Appendix K**. Analytical results for soil and groundwater samples collected from these locations are provided in **Attachments 1** through **5** in **Appendix K**. Due to previous interim remediation efforts and changing site conditions over the last 20 years, soil samples from historical investigations were not considered representative of current conditions and, therefore, not used in this HHRA. Pre-design investigation samples for soil and groundwater were analyzed for PAHs, metals, and VOCs. All detected analytes from the pre-design testing investigation in 2019 that are potentially associated with former MGP operations (i.e., PAHs, petroleum VOCs, and lead) were selected as COPCs in this HHRA for quantitative risk estimate calculations.

Following EPA risk assessment guidance, the concentrations for the seven carcinogenic PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene,

dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) were converted to a benzo(a)pyrene toxic equivalence quotient (BAP TEQ) using the relative potency factors (RPFs) presented in *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* (EPA, 1993) and Section 2.3.6 of the EPA Regional Screening Levels (RSLs) User's Guide (EPA, 2019a) and the following equation:

$$BAP\ TEQ = ([PAH_i] \times RPF_i) + \cdots + ([PAH_{vii}] \times RPF_{vii})$$

Where:

BAP TEQ = benzo(a)pyrene toxic equivalent concentration (mg/kg)

PAH_i = PAH concentration for each of the seven carcinogenic PAHs (mg/kg)

RPF_i = relative potency factor for each carcinogenic PAH (dimensionless)

Both detected and non-detected results were included in the BAP TEQ calculations. For non-detected concentrations, one-half the RL was used as a proxy value in the calculation (i.e., BAP TEQ [ND = ½*RL]). This is a conservative approach for addressing the non-detected concentrations for this screening evaluation. Therefore, to support risk management decision making, the BAP TEQ was also calculated with non-detected results set to zero (i.e., BAP TEQ [ND = 0]).

Attachments 6 and **7** in **Appendix K** present the BAP TEQ concentrations calculated for Site surface and subsurface soil (0 to 15 feet bgs) and **Attachments 8** and **9** in **Appendix K** present the BAP TEQ concentrations calculated for deep soil (> 15 feet bgs).

Because it is unlikely that receptors would be exposed to the maximum detected soil concentrations at the Site given that the majority of impacts are in the subsurface and construction debris covering the surface, the COPCs were further evaluated using statistically derived exposure point concentrations (EPCs), which were identified based on measured COPC concentrations in surface and subsurface soil and in deep soil.

ProUCL Version 5.1.002 (EPA, 2015, 2016) was used to calculate the upper confidence limit (UCL) of the mean concentration for each COPC that had a maximum detected concentration exceeding EPA RSLs for residential and industrial direct contact exposure to soil or groundwater (EPA, 2019b). The RSLs used for the HHRA are based on a target excess lifetime cancer risk (ELCR) of 1×10^5 and a target hazard quotient (HQ) of 1. For the COPCs for which 95-UCLs were calculated, the lower of maximum detected concentration and 95-UCL was used as the EPC. **Tables K-3** and **K-4** in **Appendix K** provide the comparisons of Site surface and subsurface soil (0 to 15 feet bgs) maximum detected concentrations and EPCs to the residential and industrial soil RSLs for onsite and background (offsite) areas, respectively. **Tables K-5** and **K-6** in **Appendix K** provide the comparisons of Site deep soil (> 15 feet bgs) maximum detected concentrations and EPCs to the residential and industrial soil RSLs for onsite and background (offsite) areas, respectively. **Table K-7** in **Appendix K** provides the comparisons of Site groundwater maximum detected concentrations and EPCs to the residential tap water RSLs (EPA, 2019b).

The ProUCL outputs for COPCs in surface and subsurface soil (0 to 15 feet bgs) and deep soil (> 15 feet bgs) are provided in **Attachments 10** through **13** in **Appendix K.**

Cyanide was included in pre-design testing waste characterization from 16 soil boring locations. Risk calculations for cyanide are provided in **Attachment 14** in **Appendix K**.

4.1.2 Step 2: Exposure Assessment

In the second risk assessment step of the HHRA, the following exposure scenarios were evaluated:

- **Industrial Worker Exposure Scenario**: An occupational scenario for current and possible future industrial use of the Site considers potential exposure to surface and subsurface soil (0 to 15 feet bgs) during general utility and construction activities and deep soil (> 15 feet bgs) during atypical construction/excavation activity. However, during routine use of the Site, potential exposure is

expected to be limited to surface soil (0 to 2 feet bgs). As discussed previously, this exposure scenario is considered potentially complete for the Site and is included in the quantitative risk characterization step (Step 4); however, potential exposure under current land use conditions is limited.

- **Construction Worker Exposure Scenario:** A construction scenario considers current and future onsite construction/utility workers engaged in excavation activities who are potentially exposed to surface and subsurface soil (0 to 15 feet bgs) and deep soil (> 15 feet bgs). However, since the industrial exposure workers' exposure assumptions are more conservative than a construction worker scenario, the industrial worker exposure scenario was considered protective of construction workers for this HHRA. Therefore, construction worker exposure scenario was not evaluated in the risk characterization step separately from the industrial worker exposure scenario.

- **Residential Exposure Scenario**: There is no historical or current use of the Site as residential. A possible hypothetical future use of the Site for residential scenario and possible use of the Site for groundwater supply well were evaluated. Although residential exposures are unlikely at the Site, it was evaluated to provide a conservative assessment of potential risk. This scenario conservatively considers exposure to surface and subsurface soil (0 to 15 feet bgs) during household activities. During routine household activities, potential exposure is expected to be limited to surface soil (0 to 2 feet bgs).In addition, deep soil (> 15 feet bgs) exposure is evaluated. However, it is rare that deep soil (> 15 feet bgs) will be brought to the surface.

- **Trespasser or Recreational Exposure Scenario:** The soil exposure pathways for the trespasser or recreational exposure scenarios are also considered potentially complete; however, because of the limited time spent on the Site and the limited amount of exposed soil at the Site, the magnitude of exposure will be considerably less than for the industrial, residential, and construction exposure scenarios. In addition, the Site is a secure facility and public access is prohibited. Therefore, a trespasser exposure scenario was not evaluated in the risk characterization step separately from the industrial worker or residential exposure scenarios.

The following three soil exposure pathways were identified as potentially complete for residential and industrial receptors:

- Incidental ingestion of surface, subsurface, and deep soil.
- Dermal contact with surface, subsurface, and deep soil.
- Inhalation of volatiles and airborne particulates (surface, subsurface and deep soil entrained by wind or mechanical action).

The following three groundwater exposure pathways were identified as potentially complete for residential receptors:

- Incidental ingestion of groundwater as tap water.
- Dermal contact with groundwater as tap water during household activities.
- Inhalation of volatiles during household activities such as showering.

4.1.3 Step 3: Toxicity Assessment

In the toxicity assessment step of the HHRA, the potential adverse health effects associated with the HHRA COPCs are summarized and appropriate EPA toxicity values are identified. These toxicity values are embedded in the EPA RSLs (EPA, 2019a, 2019b). For COPCs without published RSLs, surrogate chemicals were assigned as follows:

- Acenaphthene for acenaphthylene
- Pyrene for benzo(g,h,i)perylene
- Anthracene for phenanthrene
- m-Xylene for m,p-xylenes

As described in Section 4.1.1, carcinogenic PAHs were evaluated as BAP TEQ in risk calculations. However, an updated toxicological review of benzo(a)pyrene (EPA, 2017) indicates that exposures to this chemical could result in adverse effects not related to cancer. Therefore, the unadjusted benzo(a)pyrene sample data (i.e., not BAP TEQ) were also evaluated for noncancer effects.

Lead is a probable carcinogen in humans and has multiple toxic effects on the human body, such as decreased intelligence in children and increased blood pressure in adults. However, no toxicity reference values are available for lead. Therefore, lead was evaluated by comparing its concentrations with EPA RSLs of 400 mg/kg and 800 mg/kg under residential and industrial scenario, respectively.

4.1.4 Step 4: Risk Characterization

The information from the first three steps was integrated in the risk characterization step. Numerical estimates were identified for potential cancer and non-cancer risks, and the uncertainties associated with the risk estimates were summarized. EPA uses the general range of 1 x 10^{-6} to 1 x 10^{-4} as a "target range" for total ELCR estimate within which the agency strives to manage risks (EPA, 1989). EPA states that action should be taken to address risks above 1 x 10^{-4} and may be taken to address risks between 1 x 10^{-4} and 1 x 10^{-6} to reduce any potential exposure (EPA, 1991a). In addition, EPA uses a total hazard index (HI) greater than 1 as an indication that there may be a concern for adverse noncancer health effects. The cancer risks and noncancer hazards were calculated using the methods described below.

4.1.4.1 Carcinogenic Risk Estimation

The potential for carcinogenic effects associated with exposure to the COPCs was evaluated by estimating the ELCR. ELCR is the incremental increase in the probability of developing cancer during one's lifetime in addition to the background probability of developing cancer. For example, an individual exposed to a carcinogen with a calculated cancer risk of 2 × 10^{-6} indicates the probability of the individual getting cancer increases by 2 out of 1 million compared to background levels.

Chemical-specific ELCRs were calculated using a using a risk ratio approach (EPA, 1991b). For chemicals identified as COPCs based on the comparison of the statistically derived concentration to the RSL, chemical-specific ELCRs were calculated for each identified using the following equation:

$$ELCR = \frac{Soil\ EPC\ (mg/kg) \times TR\ (1 \times 10^{-5})}{Soil\ RSL\ (mg/kg)}$$

Where:

ELCR = excess lifetime carcinogenic risk estimate (dimensionless)

EPC = exposure point concentration (mg/kg)

TR = target risk level

RSL = regional screening level – cancer effects (mg/kg) (EPA, 2019a, 2019b)

The RSLs used to identify the potential for unacceptable carcinogenic effects were based on a target risk of 1 × 10^{-5}. The ELCR results from multiple chemicals are summed to a total ELCR.

4.1.4.2 Noncancer Hazard Estimation

For noncancer effects, the potential for a receptor to develop an adverse effect was estimated by comparing the predicted level of exposure for a particular chemical with the highest level of exposure that is considered protective (i.e., the screening level). For chemicals identified as COPCs, a corresponding HQ was calculated using the following equation:

$$HQ = \frac{Soil\ EPC\ (mg/kg) \times Target\ Hazard\ (1)}{Soil\ RSL\ (mg/kg)} \quad (1)$$

Where:

HQ = hazard quotient

EPC = exposure point concentration

RSL = regional screening level – noncancer effects (EPA, 2019a, 2019b)

mg/kg = milligram(s) per kilogram

The HQ results from multiple chemicals are summed to a HI. The RSLs used to identify the potential for unacceptable noncarcinogenic effects were based on a target HQ of 1.

4.1.4.3 Identification of Chemicals of Concern

For this HHRA, compounds were identified as COCs if the total ELCR was greater than 1×10^{-5} and the HI was greater than 1.

4.2 Risk Characterization Results

Risk estimates are provided in **Tables K-8** through **K-12** in **Appendix K** for surface and subsurface soil, deep soil, and groundwater. The risk estimates were calculated using EPCs based on maximum concentrations or 95-UCLs. However, in this HHRA, surface and subsurface soil and deep soil EPCs are generally identified as based on maximum concentrations, and for groundwater, all EPCs are based on maximum concentrations. Therefore, the risk estimates calculated using maximum concentrations are highly conservative.

4.2.1 Industrial Exposure Scenario

4.2.1.1 Onsite Soil

The onsite industrial risk estimates are presented in **Tables K-8** and **K-10** in **Appendix K** for surface and subsurface soil, and deep soil, respectively.

For surface and subsurface soil (0 to 15 feet bgs), the total ELCR at the Site is 2×10^{-5} when the BAP TEQ is based on ND = ½*RL, which is within the EPA target risk range (TR = 1×10^{-6} to 1×10^{-4}) (**Table K-8** in **Appendix K**). The noncancer HI is 0.2, which is less than the target HQ of 1. The primary contributors to the cancer risk are arsenic, chromium, BAP TEQ, and naphthalene.

For deep soil (> 15 feet bgs), the total ELCR (when BAP TEQ is based on ND = ½*RL) is 1×10^{-5}, which is within the EPA target risk range (TR = 1×10^{-6} to 1×10^{-4}) (**Table K-10** in **Appendix K**). The noncancer HI is 0.07, which is less than the target HQ of 1. The primary contributors to the cancer risk are arsenic and chromium.

The EPC for lead does not exceed the industrial RSL of 800 mg/kg in surface and subsurface soil (0 to 15 feet bgs) and deep soil (> 15 feet bgs). None of the detected concentrations of lead exceed the industrial soil RSL.

Based on background risk estimates (Section 4.2.1.2) and the statistical comparison (Section 3), arsenic is not considered site related in deep soil. Industrial risks in surface and subsurface soil (0 to 15 feet bgs) for arsenic onsite (6.2E-06, **Table K-8** in **Appendix K**) and offsite (background) soil (5.3E-06, **Table K-9** in **Appendix K**) are similar. Industrial risks in deep soil (> 15 feet bgs) for arsenic in onsite soil (5.6E-06, **Table K-10** in **Appendix K**) and offsite (background) soil (6.0E-06, **Table K-11** in **Appendix K**) are also similar. The statistical comparison shows arsenic above background for the 5- to 10-foot-bgs interval only.

For chromium, risks were calculated using conservative toxicity values of hexavalent chromium (i.e., 100 percent of the chromium in soil is considered to be in the hexavalent form). Chromium in soil is generally in trivalent form. Trivalent chromium and total chromium do not have cancer toxicity values (EPA, 2019b). None of the maximum detected concentrations of total chromium exceed the trivalent chromium soil RSL

for an industrial exposure scenario. Based on background risks and a toxicity assumption founded on a highly conservative surrogate, chromium is not considered site related in surface, subsurface, or deep soil.

4.2.1.2 Background Soil (Offsite)

The background (offsite) industrial risk estimates are presented in **Tables K-4** and **K-6** in **Appendix K** for surface and subsurface soil, and deep soil, respectively.

For surface and subsurface soil (0 to 15 feet bgs), the total ELCR (when BAP TEQ is based on ND = ½*RL) at the Site is 7×10^{-6}, which is within the EPA target risk range (TR =1×10^{-6} to 1×10^{-4}) (**Table K-9** in **Appendix K**). The noncancer HI is 0.05, which is less than the target HQ of 1. The primary contributors to the cancer risk are arsenic and chromium.

For deep soil (> 15 feet bgs), the total ELCR (when BAP TEQ is based on ND = ½*RL) is 1×10^{-5}, which is within the EPA target risk range (TR = 1×10^{-6} to 1×10^{-4}) (**Table K-11** in **Appendix K**). The noncancer HI is 0.05, which is less than the target HQ of 1. The primary contributors to the cancer risk are arsenic and chromium.

The EPC for lead does not exceed the industrial RSL of 800 mg/kg in surface and subsurface soil (0 to 15 feet bgs) or deep soil (> 15 feet bgs).

Table K-12 in **Appendix K** shows the cancer risk and noncancer HI estimates without the non-site-related chemicals (arsenic in deep soil and chromium in surface and subsurface soil and deep soil).

4.2.3 Residential Exposure Scenario

4.2.3.1 Onsite Soil

The onsite residential risk estimates are presented in **Tables K-3** and **K-5** in **Appendix K** for surface and subsurface soil, and deep soil, respectively.

For surface and subsurface soil (0 to 15 feet bgs), the total ELCR (when BAP TEQ is based on ND = ½*RL) is 2×10^{-4}, which is above the EPA target risk range (TR = 1×10^{-6} to 1×10^{-4}) (**Table K-8** in **Appendix K**). The noncancer HI is 2, which is above the target HQ of 1. The primary contributors to the cancer risk are arsenic, chromium, BAP TEQ, and naphthalene. There are no primary contributors to the hazard as none of the individual analytes has an HQ greater than 1.

For deep soil (> 15 feet bgs), the total ELCR (when BAP TEQ is based on ND = ½*RL) is 1×10^{-4}, which is at the higher end of the EPA target risk range (TR = 1×10^{-6} to 1×10^{-4}) (**Table K-10** in **Appendix K**). The noncancer HI is 0.9, which is less than the target HQ of 1. The primary contributors to the cancer risk are arsenic, chromium, and BAP TEQ.

Based on background risk estimates (Section 4.2.3.2) and the statistical comparison (Section 3), arsenic is not considered site related in soil from 0 to 5 feet bgs or in deep soil (> 15 feet bgs). Residential risks in surface and subsurface soil (0 to 15 feet bgs) for arsenic onsite (2.7E-05, **Table K-8** in **Appendix K**) and offsite (background) soil (2.3E-05, **Table K-9** in **Appendix K**) are similar. Residential risks in deep soil (> 15 feet bgs) for arsenic in onsite soil (2.5E-05, **Table K-10** in **Appendix K**) and offsite (background) soil (2.6E-05, **Table K-11** in **Appendix K**) are also similar. The statistical comparison shows onsite arsenic concentrations were similar to offsite (background) arsenic concentrations.

For chromium, risks were calculated using conservative toxicity values of hexavalent chromium (i.e., 100 percent of the chromium in soil is considered to be in the hexavalent form). Chromium in soil is generally in trivalent form. Trivalent chromium and total chromium do not have cancer toxicity values (EPA, 2019b). None of the maximum detected concentrations of total chromium exceed the trivalent chromium soil RSL for a residential exposure scenario. Based on background risk estimates and a toxicity assumption

founded on a highly conservative surrogate, chromium is not considered site related in surface, subsurface, or deep soil.

The EPC for lead does not exceed the residential RSL of 400 mg/kg in surface and subsurface soil (0 to 15 feet bgs) or deep soil (> 15 feet bgs). Two of the 73 surface and subsurface soil concentrations exceed the residential soil RSL of 400 mg/kg: 420 mg/kg in D-B11-2.5-3.0 and 531 mg/kg in D-B12-7.7-8.0. None of the lead concentrations in deep soil exceed the industrial soil RSL.

Cyanide was included in pre-design testing waste characterization from 16 soil boring locations and one composite soil sample (**Attachment 14** in **Appendix K**). The calculated residential HQ for cyanide in 0 to 15 feet bgs soil is 0.03.

4.2.3.2 Background Soil (Offsite)

The background (offsite) residential risk estimates are presented in **Tables K-9** and **K-11** in **Appendix K** for surface and subsurface soil, and deep soil, respectively.

For surface and subsurface soil (0 to 15 feet bgs), the total ELCR (when BAP TEQ is based on ND = ½*RL) is 7×10^{-5}, which is within the EPA target risk range (TR = 1×10^{-6} to 1×10^{-4}) (**Table K-9** in **Appendix K**). The noncancer HI is 0.7, which is above the target HQ of 1. The primary contributors to the cancer risk are arsenic, chromium, and BAP TEQ.

For deep soil (> 15 feet bgs), the total ELCR (when BAP TEQ is based on ND = ½*RL) is 1×10^{-4}, which is at the higher end of the EPA target risk range (TR = 1×10^{-6} to 1×10^{-4}) (**Table K-11** in **Appendix K**). The noncancer HI is 0.7, which is less than the target HQ of 1. The primary contributors to the cancer risk are arsenic, chromium, and BAP TEQ.

The EPC for lead does not exceed the residential RSL of 400 mg/kg in surface and subsurface soil (0 to 15 feet bgs) and deep soil (> 15 feet bgs).

4.2.3.3 Groundwater

The residential risk estimates are presented in **Table K-12** in **Appendix K** for groundwater. For groundwater, the total ELCR is 3×10^{-7} when the BAP TEQ is based ND = ½*RL, which is below the EPA target risk range (TR = 1×10^{-6} to 1×10^{-4}) (**Table K-12** in **Appendix K**). The noncancer HI is 0.03, which is above the target HQ of 1.

4.3 Summary

The HHRA used the available soil data, standard-of-practice risk assessment methods, and default exposure assumptions to develop exposure scenarios for the Site. The City owns the property but does not use it. However, construction debris consisting of soil, gravel, asphalt, and concrete has been dumped on the property. Prior to the 2019 site investigation activities, the City removed the dumped construction debris from the Site. The compounds potentially related to the former MGP operations and existing subsurface features have impacted the soil at the Site. Therefore, the exposure scenarios in this HHRA assume that no remedial action has been completed and no ICs have been implemented. Prior to the 2019 site investigation, construction debris piles covered the Site, preventing exposure. Once the debris was removed during the 2019 site investigation, the Site was secured by a fence. The Site security fence will remain in place until the remedial action is completed.

A summary of the estimated cancer risks and noncancer hazards for exposure to surface and subsurface soil (0 to 15 feet bgs) and deep soil (> 15 feet bgs) under industrial and residential scenarios is presented in **Table K-13** in **Appendix K.** For surface and subsurface soil (0 to 15 feet bgs) under the industrial scenario, risks are within the EPA acceptable cancer risk range of 1×10^{-6} to 1×10^{-4} and noncancer HI is below the target of 1. For the residential scenario, risks are above the EPA acceptable cancer risk range of 1×10^{-6} to 1×10^{-4} and noncancer HI is above the target HI of 1; however, there is no access or exposure to the soil currently.

For deep soil (> 15 feet bgs), the exposure scenarios evaluated are within, or at the higher end of, the EPA acceptable cancer risk range of 1×10^{-6} to 1×10^{-4}. Estimated noncancer HIs are below the target HI of 1.

For groundwater, the exposure scenario evaluated is below the EPA acceptable cancer risk range of 1×10^{-6} to 1×10^{-4}. Estimated noncancer HI is below the target HI of 1.

The HHRA COCs are the COPCs that contribute to the majority of the cancer risk and noncancer hazard estimates or result in individual cancer risk estimates greater than 1×10^{-5} or a hazard estimate greater than 1 in surface and subsurface soil (0 to 15 feet bgs) (**Table K-14** in **Appendix K**).

Based on the industrial exposure scenario risk characterization results, arsenic (in soil from 5 to 10 feet bgs only), BAP TEQ, and naphthalene were identified as HHRA COCs in surface and subsurface soil (0 to 15 feet bgs). Based on the residential exposure scenario risk characterization results, arsenic (5 to 10 feet bgs only), BAP TEQ, and naphthalene were identified as HHRA COCs in surface and subsurface soil (0 to 15 feet bgs). Arsenic is not considered an HHRA COC in soil from 0 to 5 feet bgs due to the statistical comparison showing arsenic is similar to background within the 0 to 5 feet bgs soil interval.

No COCs were identified in deep soil (> 15 feet bgs) for the industrial or residential scenarios.

5. Groundwater Protection Level Modeling – Potential Threat to Groundwater from Soil Contaminants

This section presents the procedure and results of using ADEQ's GPL screening method presented in *A Screening Method to Determine Soil Concentrations Protective of Groundwater Quality* (ADEQ, 1996) and GPL Spreadsheet (ADEQ, 2013) to determine if residual contaminant concentrations left in place could cause or threaten to cause contamination of groundwater. Data indicate that the vadose zone is composed of unconsolidated alluvium, which is consistent with the approach used by ADEQ (1996, 2013). The depth to groundwater at the Site is about 26 feet based on results from recent site investigation activities.

5.1 Applicable Cleanup Standards

ADEQ has established the following types of predetermined soil cleanup standards:

- SRLs are soil concentrations that are protective of human health, either under residential or non-residential exposure scenarios. A.A.C. R18-7-203(B)(1) allows the use of a pre-determined SRL only if that remediation level is also protective of groundwater.
- Minimum GPLs represent soil concentrations protective of groundwater quality. The minimum GPLs were developed by ADEQ (1996, 2013) to represent a theoretical worst-case scenario in which soil is assumed to be contaminated from surface to groundwater.

In addition to these soil cleanup standards, ADEQ's GPL one-dimensional model for vadose zone contaminant fate and transport can be used to calculate an alternate, site-specific GPL. This is achieved by inputting Site-specific characteristics that impact fate and transport, such as depth to water, depth of detectable contamination, soil porosity, and fraction of organic carbon in soil, along with chemical-specific physical properties such as solubility and ability to adsorb to organic materials in the soil. The process for calculating alternate GPLs for metals is slightly different (ADEQ, 1996). This model was used to calculate GPLs for selected compounds as described in the following sections. The GPLs (minimum GPLs or calculated GPLs) were compared to the residential SRLs and the lowest applicable soil regulatory standard was selected as the applicable cleanup standard for the Site.

A compound must have a water quality standard in order to have a GPL. Typically, the AWQS is used as the water quality standard. However, EPA and ADEQ have also established risk-based standards for compounds that do not have an AWQS (ADEQ, 1996, 2013), as is the case for most PAHs. To comprehensively assess the potential for contaminants in soil to impact groundwater, detected compounds with a risk-based standard, in addition to those compounds with an AWQS, were also modeled.

5.2 Selection of Modeled Contaminants

Section 1.3.1 presents a comparison of historical soil sampling results to SRLs, and **Section 2.4.2** presents a comparison of 2019 soil sampling results at the Site to SRLs. This section evaluates soil sampling results compared to GPLs. As discussed in **Section 1.4**, historical surface soil results were not used in evaluating current site impacts due to previous remediation activities at the Site. Historical subsurface results and 2019 surface and subsurface results were used in this evaluation.

Tables 1-2 and **2-3** present the PAH results in soil at the Site based on previous and pre-design testing investigations. Minimum GPLs are not listed in ADEQ (2013), and Jacobs modeled the 14 PAHs that were detected in subsurface soil samples and have established AWQS or Arizona risk-based standards. Benzo(g,h,i)perylene and phenanthrene do not meet these criteria and were not modeled.

Table 1-3 summarizes historical TPH results in soil at the Site. There is no AWQS or other risk-based standard in Arizona for TPH in groundwater, and GPL modeling was not conducted for TPH.

Table 1-4 summarizes historical BTEX at the Site, and **Table 2-5** presents VOC results in soil at the Site. No compounds were detected at concentrations exceeding their minimum GPLs (ADEQ, 2013), if established and GPL modeling was not conducted for VOCs.

Tables 1-5 and **2-4** summarize metals results in soil at the Site. The only compound detected at a concentration exceeding its minimum GPL (ADEQ, 1996) in the subsurface soil samples was lead. An alternative GPL was calculated for lead in subsurface soil samples.

5.3 Alternate GPL Development

5.3.1 Polynuclear Aromatic Hydrocarbons

The ADEQ (2013) spreadsheet model was used to calculate minimum GPLs for the following PAHs:

- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenzo(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Pyrene

A combination of model default values, chemical-specific values, and site-specific values were used to calculate minimum GPLs for these compounds at the Site. Copies of the modeling spreadsheet for each compound, including the sources of the values used, are included in **Appendix L**. GPL modeling output values are shown on the GPL tab of the model spreadsheet. The ADEQ model does not display results greater than 11 digits, over 1 billion mg/kg, and some results cannot be displayed by the GPL model. GPL results are listed in **Table 5-1**.

Unless otherwise specified, model default values were used. Examples include the release width and soil porosity. Although biodegradation of petroleum hydrocarbons in soil and groundwater is expected, the half-life of 100,000 days, indicating a very low biodegradation rate, was used because PAHs are not as readily degradable as volatile compounds. The default time step of 10 days was used except in some instances where it was adjusted so that the peak liquid phase concentration was clearly visible on the Jury1 Output graph.

Chemical-specific values include the water quality standard or risk-based standard, octanol-water partitioning coefficient, Henry's constant, and solubility. For most of the modeled compounds, these values were obtained from the lookup table in ADEQ (2013). When these values were not available in that source, they were obtained from other sources such as ADEQ (1992), EPA (2019) and the New Jersey Department of Environmental Protection (2019).

Site-specific values include the depth to groundwater, dry bulk density, foc, and moisture content. The depth to groundwater was assumed to be 26.48 feet bgs, which was the minimum depth to water measured in boreholes during the 2019 investigation. This value, converted to 807 centimeters, was also used for the depth of incorporation and the total vadose zone depth. Analytical and geotechnical data from the Site investigation, summarized in **Table 2-2**, were used for the other values. The average dry bulk density was 94.5 pounds per ft^3, or 1.51 grams per cubic centimeter. The average foc was 1.9 percent. The average water content, not including two values that were obtained from beneath the water table, was 9.9 percent.

Table 4-1 summarizes the modeling results.

Based on modeling results for anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, and pyrene, the calculated GPLs were greater than 1.0 x 10+6 mg/kg (also equal to 1 kg/kg), which exceeds unity. This means that the mass of the contaminant present in the soil would need to exceed the total mass of soil, which is not possible. A GPL could not be calculated for indeno(1,2,3 c,d)pyrene because the model-estimated maximum soil concentration was too low, resulting in attempted division by zero.

The calculated GPLs for acenaphthene (90,300 mg/kg), acenaphthylene (29,100 mg/kg) and naphthalene (113 mg/kg) provide potential cleanup standards for these compounds. None of the PAH concentrations reported in **Table 2-3** exceeded the calculated GPLs.

5.3.2 Metals

ADEQ (1996) describes the method for calculating an alternative GPL for metals. This method uses the ratio between the total metal concentration in soil to the concentration of the metal in the leachate from a TCLP or SPLP procedure. The calculation is (ADEQ, 1996):

$$X = 292.9 \times R \times Cw$$

Where:

- X is the alternative GPL
- R is the ratio of the total metal concentration in soil to the concentration in leachate
- C_w is the maximum allowable groundwater concentration (in this case, the AWQS of 0.05 mg/L)

TCLP analysis was conducted on the two soil samples that exceeded the minimum GPL.
Sample D-B11-2.5-3.0 contained lead at a concentration of 420 mg/kg, and the TCLP leachate contained 0.128 mg/L of lead, resulting in a ratio of 3,280. Sample D-B12-7.5-8.0 contained lead at a concentration of 531 mg/kg, and the TCLP leachate contained 0.92 mg/L of lead, resulting in a ratio of 577. To develop a conservative GPL, the lower ratio was used, and the calculation became:

$$X = 292.9 \times 577 \times 0.05$$

The resulting alternative GPL for lead in Site soil is 8,450 mg/kg. None of the measured concentrations exceeded this value.

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6. Feasibility Screening

The site-specific RAOs and the screening and evaluation processes for remediation of soil that is protective of human health and groundwater at the Site are described in this section. Remediation options are screened based on site-specific factors to eliminate technologies that constrain effectiveness, implementability, or cost-effectiveness at the Site and streamline the evaluation process for the technologies retained for a detailed evaluation.

6.1 Remedial Action Objectives

The objectives of this remedial action are to reduce concentrations of COCs, primarily PAHs, and lead in soil to levels below appropriate risk-based cleanup criteria and to remove source material that may potentially impact the groundwater to the extent technically feasible. Site-specific cleanup criteria to achieve the RAOs are discussed in Section 7.2. The Site will be remediated so that concentrations remaining in the soil are protective of human health and the environment.

The following RAOs are based on specific constituents, potential exposure, and future Site uses:

- Reduce the concentration of COCs in soil to below regulatory risk-based levels (residential SRLs) where feasible.
- Reduce the concentration of COCs in soil to below levels that could potentially impact groundwater above water quality standards.

6.2 Remediation Technology Screening

To meet the site-specific RAOs, a range of remediation options was considered for the Site.

6.2.1 No Action

The no action response is considered during the development and analysis of alternatives as the baseline against which other technologies are evaluated. The no action response does not provide any additional remediation, containment, or security measures to reduce the potential risk to human health or the environment at the Site.

6.2.2 Institutional Controls

ICs are restrictive measures placed on the use of the Site to prevent or limit exposure to hazardous substances left in place at the Site. Typically, ICs are implemented as engineering and/or legal controls that are often used in conjunction with active remediation activities, such as treatment or containment. Often, it is necessary to implement multiple ICs to provide overlapping assurances of protection of future receptors. ICs result in restrictions that effectively limit the manner in which the Site can be used in the future.

6.2.3 Ex Situ Response Actions

Ex situ response actions for MGP sites consist of the removal of impacted soil followed by treatment and/or disposal. For impacted soil, the response includes excavation of the impacted soil. The excavated soil is disposed of offsite at a permitted facility or can be treated onsite or offsite using enhanced biological or thermal treatment technologies.

6.2.4 In Situ Response Actions

The in situ response actions considered for the Site are described in this section.

6.2.4.1 Monitored Natural Attenuation

The monitored natural attenuation response action provides no additional active remediation. It relies on natural chemical, physical, and biological processes to degrade contaminants in soil. This alternative requires ongoing periodic sampling and analysis of the soil samples to monitor the degradation process.

6.2.4.2 Containment

Containment of elevated concentrations of PAHs in soil is a potential response that could be implemented to prevent exposure. Containment actions would be implemented to prevent potential human and/or ecological contact by constructing an engineered cover system over areas of elevated concentrations of PAHs in soil.

6.2.4.3 Thermal Desorption

In situ thermal desorption uses a series of subsurface or in-well heaters that cause the applicable chemicals to volatize. These contaminated vapors are captured and treated/oxidized prior to being released into the atmosphere.

6.2.4.4 Chemical Oxidation

In situ chemical oxidation (ISCO) mineralizes contaminants in place through the addition of a chemical oxidant, such as hydrogen peroxide, ozone, or sodium persulfate. The chemical oxidant is typically introduced into groundwater or saturated soil by injection into wells or the use of in-place soil mixing. Oxidants such as ozone can be introduced into the vadose zone through injection wells.

6.2.4.5 Soil Stabilization and/or Solidification

In situ soil stabilization uses chemical and pozzolan additives to immobilize and/or encapsulate contaminants in the soil. These chemical and pozzolan additives (cementitious material used in cements and concretes) are typically added to the soil by in-place soil mixing.

6.2.4.6 Bioventing

Bioventing enhances the natural biological activity through the introduction of atmospheric oxygen. Air is pumped into the soil through injection wells using low-pressure pumps. The injected air increases the oxygen level, allowing an increased rate of degradation of lighter and mobile fractions of organic contaminants in the soil. Bioventing is typically combined with monitored natural attenuation by measuring the oxygen depletion and the generation of carbon dioxide and other degradation products in monitoring wells near the injection well.

6.3 Remediation Technology Screening Results

The remedial action for the Site is intended to meet the RAOs by addressing elevated concentrations of COCs in soil so that exposure at the Site is reduced or eliminated. To achieve these objectives, soil remediation alternatives were selected during the screening process for further evaluation, as described in the following sections.

6.3.1 Soil Remediation Alternatives

A summary of the remediation technology screening results is presented in **Table 6-1**. The screening evaluation for the additional excavated soil treatment options is presented in **Table 6-2**.

The remediation alternatives are evaluated in detail based on their effectiveness at achieving RAOs, implementability, and cost.

To evaluate effectiveness, consideration was given to the overall protection of human health and the environment; reduction in toxicity, mobility, and volume; compliance with ADEQ requirements; and the long-term and short-term effectiveness of the alternative.

To evaluate the implementability of each alternative, the technical feasibility, commercial and administrative feasibility, and acceptance by ADEQ, the City, and the public were considered.

Previously conducted feasibility cost estimates were used to evaluate remedial action costs. The costs were evaluated in ranges of low, mid-range, and high cost based on both capital and operational cost.

6.3.1.1 Alternative 1 – No Action

Under Alternative 1, the no action alternative, no physical remedial actions would be performed to reduce the toxicity, mobility, or volume of contaminants identified in soil at the Site, and no land use controls or land use restrictions would be implemented at the Site. The no action alternative is presented to provide a baseline for comparison with other alternatives that provide a greater level of response.

Effectiveness

The no action alternative would not be effective because contaminants would remain at the Site, future human health and environmental risks would continue to be present, and the remedy does not meet APS's remedial objectives.

Implementability

The no action alternative would be technically easy to implement, but it does not protect human health and the environment and, therefore, is unacceptable.

Cost

No costs are associated with Alternative 1.

6.3.1.2 Alternative 2 – Institutional Controls

ICs under Alternative 2 include administrative land use controls, Site access restrictions, and other restrictions to minimize potential exposure from Site contaminants. The Site is currently secured by a fence and gates. Other ICs would include a DEUR on the property title and inclusion of the facility in the Terradex LandWatch Service to prevent unauthorized activities onsite.

Effectiveness

If properly implemented and maintained, ICs would be effective in limiting human exposure to contaminated soil and potential pathways of concern, such as dermal contact. Continued monitoring of ICs would be required to verify their continued effectiveness and ensure that the exposure pathways are being controlled. However, the remedy would not be effective because it does not meet APS's remedial objectives.

Implementability

ICs would be implementable under current site conditions; however, the City would be unable to develop the property for beneficial public use. The City would not be in favor of having restrictions or a DEUR placed on the Site, and regulatory agencies may not find ICs favorable as a standalone remedy for the Site. ICs can effectively address risks associated with the dermal contact pathway. The use of ICs would severely limit the City's use of the Site. Because contaminants would remain at the Site under this alternative, any future changes to land use would require addressing contamination. This remedy is difficult to implement because only the landowner (the City and/or private landowners) can put a property restriction on the property.

Cost

The cost range is estimated to be low. The total cost for Alternative 2 includes the administrative costs associated with implementing a Site DEUR, inspecting land use covenant implementation, performing annual monitoring to ensure the fencing is effective in preventing Site access.

6.3.1.3 Alternative 3 – Excavation and Offsite Disposal

Alternative 3 includes the excavation of soil exceeding Site cleanup goals. Fugitive debris and subgrade structures would be removed and disposed of offsite. Soil would be excavated using heavy equipment, loaded into trailers, and hauled to a licensed offsite disposal facility. The Site would be backfilled with imported clean soil and the surface restored per the City's requirements.

Effectiveness

The excavation and disposal alternative would be an effective and permanent remedial action. This alternative would reduce potential risks to human health and the environment by eliminating contaminants above residential SRLs. The contaminated soil would be removed from the Site and transported to an offsite disposal facility, eliminating contact with potential receptors. The physical removal of the soil would eliminate the exposure of contaminants to receptors and eliminate the mobility of contaminants.

Implementability

This alternative would be difficult to implement. Removal of soil would require mobilization and utilization of heavy equipment. To remove all soil exceeding SRLs, the excavation would need to be extended to at least the existing north Site boundary and potentially require permitting to encroach on the wash north of the Site. There are areas on the Site where the soil exceeds cleanup goals to a depth of more than 15 feet bgs. Excavation of soil to that depth will require sloping and potentially the design and installation of an earth support system, and/or utilizing an auger for soil removal.

Furthermore, high-pressure gas lines (El Paso Natural Gas and Southwest Gas) are located on the Site. These utilities would need to be protected in place and must be considered and addressed to the project.

Excavation activities would result in significant disturbance both onsite and offsite. A substantial amount of pedestrian traffic crosses the entrance to the Site, which will need to be protected during excavation due to additional truck traffic during hauling of soil for disposal. Pedestrian traffic engineering controls would likely need to be implemented to protect the public.

Cost

The cost of Alternative 3 is high. The alternative would include excavation, transportation, disposal, and utility avoidance.

6.3.1.4 Alternative 4 – Containment by Capping and Institutional Controls

Alternative 4 includes the construction of an engineered cover system over the Site along with ICs as described in Alternative 2. The cover system would consist of the existing concrete slabs. New asphalt pavement would be placed over the impacted soil.

Effectiveness

If properly implemented and maintained, a cover system with ICs would be effective in limiting human exposure to contaminated soil and potential pathways of concern, such as dermal contact. Annual inspection of the cover system, along with continued monitoring of ICs, would be required to verify the continued effectiveness and control of exposure pathways. However, the remedy would not be effective because it does not meet APS's remedial objectives.

Implementability

The difficulty in implementing this alternative would be moderate. Regulatory agencies may not find the cover system with ICs favorable as a standalone remedy for the Site. The cover system and ICs can effectively address risks to the dermal contact pathway. The use of a cover system would limit the City's future use of the Site; because contaminants would remain at the Site under the cover system, any future subsurface work, including replacement or repairs to utilities, would require breaching the cover system to perform the work. Any future changes to land use would require addressing contamination. A cover system would require a DEUR, with an annual inspection requirement, to be placed on the Site title, which would not be acceptable to the City due to limitation of future property development. This remedy would be difficult to implement because only the landowner (the City and/or private landowners) can put a property restriction on the property.

Cost

The cost range of Alternative 4 is estimated to be moderate. The total cost for Alternative 4 includes the capital cost of installing the asphalt and the administrative costs of implementing a Site DEUR; inspecting the covers system and fencing; conducting maintenance and repairs; and training future staff who work onsite.

6.3.1.5 Alternative 5 – In Situ Chemical Oxidation

This alternative consists of injecting a chemical oxidant into the impacted soil zones at the Site. Because the impacted soil is located in the vadose zone, a gas-phase oxidant such as ozone could be used to achieve greater contact with impacted soil. The system would require the installation of an ozone generator and one or more new onsite injection wells. Several soil vapor monitoring wells (SVMWs) would also be required to evaluate the effectiveness of the system. The SVMWs may be used for soil vapor extraction. The system would be operated to maintain high levels of ozone in the subsurface over a relatively short period of time. The operation of the system would be monitored by measuring the soil vapor concentrations, the consumption of oxygen, and the production of carbon dioxide and degradation products (including methane) in SVMWs around the Site.

Effectiveness

The use of ISCO with ozone in the vadose zone has been effective with some high molecular weight compounds, though it may not be possible to achieve levels below SRLs. The use of a gas increases the potential of oxidant contact with impacted soil. This alternative does not address potential soil contamination from lampblack near the surface onsite. ISCO would not reduce lead concentrations above the residential SRL and GPL. ISCO will not be effective as it does not meet APS's remedial objectives.

Implementability

The difficulty of implementing the ISCO system is moderate to high because of its limited reach to deeper onsite soil. Regulatory agencies would not likely accept ISCO as a standalone remedy. The system requires the design and installation of an ozone generating system, installation of one or more injections wells, and installation of several SVMWs. The use of a system with a corrosive gas in a residential area may cause safety concerns to residents, in addition to workers operating the equipment, and require inclusion of process safety systems. If soil vapor extraction is used, a county air permit may also be required. The injected ozone is highly corrosive. Although the injection system could be designed for the corrosive environment, the impacts on the high-pressure gas lines in the area would need to be evaluated. ISCO also carries a high worker risk during implementation due to worker exposure to corrosive chemicals.

Cost

The cost of the ISCO system would be high. The capital cost of the ISCO system would include installation of an ozone generation system and one or more injection wells. Several SVMWs also would

need to be installed to monitor system operation. The system would require ongoing long-term operation, maintenance, monitoring, and repairs. Soil vapor monitoring would likely need to continue for several months until the remediation is complete.

6.3.1.6 Alternative 6 – Bioventing

This alternative consists of installing a bioventing system to pump atmospheric air into one or more new onsite injection wells. The system would be operated to maintain oxygen levels in the subsurface near atmospheric levels. System operation would be monitored by measuring the consumption of oxygen, as well as the production of carbon dioxide and degradation products, including methane in SVMWs around the Site.

Effectiveness

This alternative would not be effective because most of the Site PAH compounds have high molecular weights, and remediation effectiveness would be limited and very slow. Bioventing would not reduce lead concentrations in the soil and would not meet APS's remedial objectives.

Implementability

The difficulty of implementing the bioventing system is low to moderate because of its limited onsite use. Regulatory agencies would not likely accept bioventing as a standalone remedy. The system would be relatively easy to install onsite. The system would require the installation of soil vapor injection wells and SVMWs. The system would need to operate for many years and could interfere with the City's operations at the Site.

Cost

Cost of the bioventing system would be moderate. Capital cost of the bioventing system would include a small blower unit and wells. The system would require ongoing operation, maintenance, monitoring, and repairs. Also, soil vapor monitoring would likely need to continue for several years until the remediation is complete.

7. Recommended Remedial Alternative

This section describes the goals and objectives of the proposed remedial action, presents the regulatory cleanup requirements, and describes the pre-remediation and remediation activities, the sampling and analysis procedures, the Site restoration activities, and the post-remediation activities.

Based on the technology evaluation presented in Section 6.3, the remedial action recommended to meet RAOs is Alternative 3, Excavation and Offsite Disposal. The excavation depths will range from up to 5 feet bgs over a portion of the Site to up to 22 feet bgs under the north gas holder where the deepest impacts were reported. Proposed excavation locations and DUs are shown on **Figure 7-1**. Excavation depths within the DUs are shown on **Figure 7-2**. This remedial action will reduce the concentration of PAHs and lead in soil to below residential SRLs. A detailed discussion of the proposed excavation areas and how the recommended remedial action will meet the RAOs is provided in Section 7.4.6.

A project-specific health and safety plan (HASP) will be submitted for the remedial activities. The HASP will outline the minimum health and safety requirements for personnel working on Site remedial activities. The HASP will include the following:

- Project Site description
- Project organization and tasks to be performed
- Hazard evaluation and control
- Personnel training and requirement
- PPE
- Air monitoring specifications
- Decontamination
- Emergency response plan and contacts

The Quality Assurance Project Plan (QAPP) (Jacobs, 2019c) was prepared for APS's MGP and other sites. The QAPP was developed as specified in *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations* (EPA, 2001a). The QAPP provides a description of the analytical methods to be used, the applicable laboratory analytical methods, and the quality assurance (QA)/quality control (QC) procedures used to evaluate the data.

7.1 Cost Recovery

The remedial actions to be implemented based on this RAP will be undertaken by APS. APS will not seek to recover any of the costs associated with the implementation of the RAP from any other responsible party.

The undersigned hereby certifies that to his/her knowledge, cost recovery from another responsible party will not be made.

State of Arizona

SS:

County of Cochise

Signed this _____ day of _____, 2020.

_____

Signature [APS Representative]

_____

Title

SUBSCRIBED AND SWORN TO before me this _____ day of _____, 2020.

_____

Notary Public

My Commission Expires: _____

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7.2 Cleanup Criteria

The purpose of the cleanup is to allow residential and non-residential use of the property after remedial activities are complete and to prevent potential impacts to groundwater. The following sections present the selected cleanup criteria for the remedial action at the Site.

7.2.1 Chemicals of Concern

Jacobs identified the final COCs at the Site based on former MGP operations and the results of previous and pre-design testing investigations. **Table 7-1** lists the compounds that were evaluated as potential COCs for the remedial action. **Table 7-2** presents the final COCs identified at the Site and the associated cleanup criteria.

7.2.2 Goal of Remediation

APS is conducting the remedial action under ADEQ's VRP oversight. The goal of this remediation is to reduce COC concentrations in soil to levels below applicable regulatory cleanup criteria, as discussed in Section 7.2.3. The COCs requiring remediation are primarily PAHs but also include lead (**Table 7-2**).

7.2.3 Applicable Regulatory Cleanup Criteria

This section discusses soil remediation criteria for the remedial action.

7.2.3.1 Soil Remediation Criteria

Numeric soil cleanup regulatory criteria are established by ADEQ as SRLs and GPLs, and are described in the following sections.

Soil Remediation Levels

SRLs are predetermined risk-based remediation levels derived from toxicity data using defined assumptions for possible exposure. SRLs are developed by the ADHS Office of Environmental Health for ADEQ (ADEQ, 2009) and are based on the following:

- EPA Region 9 Preliminary Remediation Goals (PRGs)
- Ingestion, inhalation, and dermal contact risk criteria
- ELCR of 1 x 10^{-6} for Class A (known human) carcinogens, and 1 x 10^{-5} for Class B and C carcinogens
- HI no greater than 1 for noncancer-causing contaminants

Because of the varied applications of SRLs, the underlying assumptions for their development are very conservative.

The application of SRLs is based on future land use and the potential for contaminated soil to impact human health. Contaminated soil can be remediated to background concentrations, the predetermined SRLs (A.A.C. Title 18, Chapter 7, Article 2), or site-specific remediation standards. SRLs are established for both residential and non-residential uses. Where soil is remediated to the non-residential SRL, but above the residential SRL, the property owner must attach a DEUR to the property deed. Compounds identified in the 2007 SRLs as carcinogens include residential SRL values for both 1 x 10^{-5} and 1 x 10^{-6} ELCRs. A.A.C. R18-8-205 states, "*a person who elects to remediate to a residential SRL may utilize a 1 x 10^{-5} excess lifetime cancer risk for any carcinogen other than a known human carcinogen. If the current or currently intended future use of the contaminated site is a child care facility or school where children below the age of 18 are reasonably expected to be in frequent, repeated contact with the soil, the person conducting remediation shall remediate to a 1 x 10^{-6} excess lifetime cancer risk*."

SRLs are developed based on exposure to soil and do not incorporate risk associated with potential leaching of contaminants from soil to groundwater. SRLs may be used only as remediation standards when the value is also protective of aquifer water quality.

Groundwater Protection Levels

To evaluate whether impacted soil may pose a threat to groundwater, ADEQ developed a model for determining soil concentrations protective of groundwater quality using mathematical calculations of contaminant partitioning between soil and groundwater to estimate GPLs (ADEQ, 2013). The modeling result is a projection of the leaching potential of COCs from impacted soil to groundwater. GPLs can be calculated for site-specific conditions or a predetermined worst-case scenario. The worst-case scenario is referred to as the minimum GPLs, which are soil concentrations that are protective of groundwater quality under a condition where contaminated soil is in contact with groundwater. Site-specific GPLs can be calculated using geotechnical data and physical properties of the compounds.

HHRA Criteria

The HHRA identified three COCs in soil below 15 feet bgs at the Site, which included arsenic, naphthalene, and BAP TEQ (which represent a total risk value for seven carcinogenic PAH compounds). Naphthalene and arsenic each have residential SRLs, and each of the seven BAP TEQ compounds (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) that comprise the BAP TEQ have applicable SRLs. Therefore, the residential SRLs will be used as cleanup criteria in lieu of developing site-specific HHRA values.

7.2.4 Site Cleanup Criteria

The Site cleanup criteria are based on remediating accessible soil to concentrations of COCs that are protective of human health and the environment. Residential SRLs (using a 1×10^{-5} ELCR), non-residential SRLs, and minimum GPLs were compared for the Site, and the lowest appropriate remediation level, based on future land use, was selected by APS. Additionally, the COCs identified in the HHRA were compared to the COCs identified based on SRLs to arrive at a final list of COCs for the remedial action. Applicable Site cleanup criteria for COCs are listed in **Table 7-2**. To allow future unrestrictive use of the Site property, the residential SRLs will be used as the soil cleanup criteria.

7.3 Pre-remediation Activities

To meet remediation goals for the Site, APS will complete the following pre-remediation activities before the contractor starts the remedial activities:

- Property ownership review and coordination
- Regulatory review and permitting
- Public notice and public participation
- Utility clearance

7.3.1 Property Ownership and Utilities Review and Coordination

The Site property is owned by the City and private property owners. APS has obtained an access agreement from the City and private owners to perform the remediation work on the Site.

El Paso Natural Gas and Southwest Gas have high-pressure gas supply pipelines that are located under the Site on City and private property and run between excavation areas. Southwest Gas has provided APS with excavation guidelines (Southwest Gas Form 279.0 (02/2013) for work around Southwest Gas utilities. APS will work with the gas companies for excavations around the pipeline. As a matter of public and worker health and safety, excavation will not occur within 10 feet of the high-pressure gas lines without coordinating with the pipeline owners. Southwest Gas excavation guidelines are provided in Appendix M.

7.3.2 Regulatory Review and Permitting

As part of the remedial construction activities, federal, state, and local laws require APS to obtain certain environmental- and engineering-related permits. While permitting activities have been initiated, many of the final permits cannot be obtained until the remedial design is approved and a contractor is selected. Based on existing Site information and agency input, the following permits have been identified as being potentially required to implement the activities specified in the RAP. Based on final agency input after initial permit application submittal and/or changes in activities at the Site, additional permits and/or approvals may be required.

City of Douglas Construction Permit

The Site is located within the City incorporated area. Therefore, in accordance with Title 15 of the *City of Douglas Code of Regulations* and conversations with City personnel, a right-of-way permit application, including the haul route, must be submitted to the City.

APS will coordinate with the City to submit the required application and associated information.

If tree removal is required, the permitting will be coordinated through the City adhering to City tree removal permitting requirements.

Floodplain Use Permit

Based on a review of Federal Emergency Management Agency flood control maps, the Site is not located within a regulatory floodplain. However, in *Arizona Revised Statutes* (A.R.S.) 48-3610 the Arizona State Legislature enabled the City to assume the powers and duties for floodplain management and adopt regulations in conformance with A.R.S. 48-3609 designed to promote the public health, safety, and general welfare of its citizenry (*City of Douglas Code of Regulations*, Chapter 15.20). If the City requires a floodplain use permit, the City will issue a floodplain use permit during the right-of-way permitting process.

Arizona Pollutant Discharge Elimination System Construction General Permit

The anticipated area of disturbance at the Site, including excavation, equipment staging, and other earth-disturbing activities conducted during the remedial activities is expected to exceed 1 acre. A general construction permit will be required per A.A.C. R18-9-A905 and 40 *Code of Federal Regulations* (CFR) 122.26(b)(15), and a notice of intent must be submitted to ADEQ. The anticipated total area of disturbance is greater than 1 acre; therefore, a notice of intent will be required for this remediation project. Additionally, a stormwater pollution prevention plan will need to be prepared for the Site. The stormwater pollution prevention plan will include best management practices and inspection procedures during all construction activities.

Arizona Department of Water Resources Permit for Dewatering Activities

Based on existing groundwater levels, it is not expected that the excavation activities at the Site will require dewatering for completion. However, if dewatering is required, the final dewatering system design will be prepared by the remediation contractor in accordance with requirements in the project specifications. APS will obtain the required Arizona Department of Water Resources permit to meet permit conditions and reporting requirements.

Special and Hazardous Waste Requirements

Because soil sampling results indicate that PAHs are present in Site soil above residential and non-residential SRLs, the soil intended for excavation meets the definition of an Arizona special waste PCS. Therefore, offsite soil disposal requires that the generator must have a special waste generator identification number (ID) and that the transporter must be registered with ADEQ as a special waste shipper. The APS Arizona Special Waste PCS ID number is 320482 and the PCS was issued December 9, 2019.

If soil excavated from the Site contains contaminants in concentrations exceeding hazardous waste TCLP levels, the soil will be transported to a facility licensed to receive hazardous waste, but it will be transported as a special waste PCS per the MGP exemption discussed in Section 7.4.8; therefore, a hazardous waste generator ID will not be required.

APS will use a qualified contractor or contractors to transport materials for offsite disposal. APS will verify that any contractor used has the appropriate authorization from ADEQ or EPA to transport the waste materials.

If the soil exhibits the hazardous waste characteristics of corrosivity, reactivity, or ignitability based on analytical results for these parameters, it will be managed as a hazardous waste and will be properly manifested. Copies of manifests will be submitted to ADEQ.

Special waste PCS and/or hazardous waste will be transported to a facility permitted for disposal of these wastes. The soil will be stored prior to disposal in accordance with the requirements for special waste PCS or the requirements for hazardous waste, if applicable. APS will report quantities of special waste shipped from the Site via ADEQ's Special Waste Generator Annual Report Form.

National Emissions Standards for Hazardous Air Pollutants Notification and Demolition Permit

The Site contains no aboveground structures. Subsurface concrete structures are present at the Site and will require sampling prior to disposal. If transite (asbestos) pipe is encountered, or any other asbestos-containing suspect buried material is exposed in a DU, an asbestos survey of the structure to be demolished will be conducted by a certified Asbestos Hazard Emergency Response Act (AHERA) inspector. If asbestos-containing material (ACM) is present, an asbestos abatement contractor will remove the ACM prior to excavation of the DU. A National Emissions Standards for Hazardous Air Pollutants (NESHAP) notification will be filed with ADEQ at least 10 days prior to removal and/or ACM abatement. There is also the potential for ACM to be encountered in subsurface structures or pipelines within the limits of the excavation. If suspected ACM is encountered and/or is planned to be removed, a certified-AHERA inspector will evaluate the structure and collect required samples. If the presence of ACM is verified over the threshold quantities, the appropriate NESHAP notifications will be made to Cochise County at least 10 days before removal of the ACM. All ACM will be managed in accordance with appropriate waste management requirements.

Dust Control Requirements

Based on discussion with representatives of the City, dust control requirements during demolition and excavation activities will be addressed by the City during issuance off the right-of-way permit/approval. Cochise County does not have dust control requirements associated with activities inside the City. However, Cochise County has a land clearing ordinance (No. 00-030) and clearing permit that is submitted with the City construction permit application. Dust control measures using water will be actively applied during all excavation activities to prevent dust.

Section 404 Permit and Supporting Documentation

Construction activities that result in the discharge of dredged or fill material to the "waters of the United States" require a Clean Water Act Section 404 permit issued by the U.S. Army Corps of Engineers (USACE). A wash that is likely jurisdictional is located across the northern portion of the Site and, based on the location of impacted soil near the wash, remediation activities have the potential to affect this wash.

A public records request for previous jurisdictional determinations for the area was submitted to the USACE in December 2019. The 2003 and 2004 jurisdictional determinations were received in January 2020 and will be used as reference documents during the Section 404 investigation and permitting processes. A new preliminary jurisdictional delineation was conducted in December 2019 to evaluate the project area and identify potential waters of the United States. APS will submit a Section 404 Nationwide Permit No. 38 preconstruction notification to the USACE to request authorization for potential activities in

the wash because (1) the preliminary jurisdictional delineation indicated that the wash determined jurisdictional in 2003/2004 still exhibits characteristics of an ordinary high water mark, and (2) remediation activities have the potential to affect at least one wash recommended as waters of the United States. The preconstruction notification will document compliance with the requirements of Nationwide Permit No. 38, including cultural and biological reviews and other applicable information. Activities cannot commence within any washes recommended as jurisdictional until the USACE has approved the preconstruction notification and issued the permit.

Excavation and related activities at the Site are anticipated to have no effect on threatened and endangered species or their habitat. This assessment is based on the lack of suitable habitat at the Site for any special-status plant or wildlife species, as identified by the U.S. Fish and Wildlife Service and Arizona Game and Fish Department. Therefore, consultation pursuant to Section 7 of the Endangered Species Act is not anticipated.

No known cultural resources sites are located within the anticipated footprint of the excavation and related activities at the Site. Therefore, a project finding of “no historic properties affected” will be recommended to support the USACE’s responsibilities under Section 106 of the National Historic Preservation Act. While no further cultural resources work will be recommended along with the project finding, the USACE makes the final decision as to whether Section 106 consultation will be required to support the preconstruction notification. If the USACE chooses to consult with the Arizona State Historic Preservation Office and Tribes, draft Section 106 consultation letters will be prepared and submitted to the USACE.

To streamline the permitting process, the USACE will allow the preliminary jurisdictional delineation and preconstruction notification to be combined into one submittal. The USACE review time is anticipated to be about 45 days if Section 106 consultation is not required and about 2 months with Section 106 consultation.

7.3.3 Public Notice and Public Participation

APS has a community relations and public involvement program for the Site. APS will give the ADEQ-required public notice, specified in A.R.S. Section 49-176, in addition to performing other proactive public participation activities. APS will prepare Site status newsletters in both English and Spanish and distribute them to neighboring businesses, residents and community leaders. A mailing list will be developed that includes community leaders, media outlets, neighboring businesses, residents, and interested community members.

As part of APS’s continuing public involvement program, the following additional outreach measures will be taken once the RAP is completed and approved by ADEQ:

- Develop a specific community involvement program that includes state and local participants.
- Update the newsletter to include RAP information and distribute to interested parties.
- Conduct a community leader briefing.
- Maintain a sign at the Site with the name and telephone number of a person who may be contacted for information regarding the field work, in accordance with A.R.S. Section 49-176(A)(2)(a).
- Provide construction updates to the community once work at the Site begins.
- Post a legal notice in *The Douglas Dispatch* newspaper regarding the availability of the RAP for review and the time of the public comment period.
- Provide a public comment period (30 days) as required in Section 49-176. The comment period will run concurrently with the activities described previously. As part of the public comment period, APS will hold an open house to provide nearby residents and businesses information on the remedial activities and request more information.
-

The remediation at the Site is anticipated to take approximately 6 months. During this time, APS will develop a construction progress newsletter for periodic distribution to the community.

7.3.4 Utility Clearance

During the pre-design testing investigation, known utilities were located with the assistance of Blue Stake and utility personnel. AZTEC was also hired to designate and survey utility lines using signal line generators and ferrous magnetic locator method and to survey the locations of the utilities. The objective of the utility evaluation was to identify utility locations and potential issues that may have impacted the pre-design testing investigation and the remedial design. **Figure 7-2** shows the location of the detected utilities.

The main underground utilities on the Site are the El Paso Natural Gas and Southwest Gas high-pressure gas lines. For health and safety reasons the gas lines will not be exposed during the planned excavation activities. Excavations will be located at least 10 feet from the gas lines unless closer work is authorized by the gas utility, APS, the Jacobs responsible health and safety manager, and the contractor. No other utilities are anticipated to impact excavation activities. Overhead power lines run parallel to the gas line on the west side of the Site and are not anticipated to impact excavation activities based on pre-design testing investigation results. Southwest Gas excavation guidelines are provided in Appendix M.

Because of the presence of underground utilities in the proposed excavation areas, an updated Blue Stake ticket will be maintained at all times during the project.

7.3.5 Access Agreements

APS has secured access agreements from the City and private property owners to complete the remediation activities described in this RAP.

7.4 Remediation Activities

7.4.1 Mobilization

The contractor selected by APS will be responsible for mobilization to the Site. APS will gain prior approval from the City and private property owners for Site access, construction trailer locations, and utility hookups such as electrical, and communications. The following activities will be performed as part of mobilization:

- Construction trailers and the required utility hookups will be placed (Jacobs/APS trailer and contractor trailer). Trailers will be equipped with all equipment listed in the contract specifications, including heating, air conditioning, lighting, electrical, telephone service, fax machine, and copier.
- Equipment mobilization will include excavators, loaders, pressure washers, sampling equipment, air monitoring equipment, and health and safety equipment.
- Run-on/runoff control measures will be established that may include silt fences, hay bales, and silt curtains.
- A pre-construction meeting will be conducted to review all aspects of the project, including health and safety, access, authorized personnel, construction schedule, change orders, odor and dust control, stormwater management, and soil and debris segregation.
- Photographs will be used to document the pre-construction conditions of all equipment, roads, driveways, buildings, and any features that might be affected by the remedial activities. This documentation will be conducted prior to the initiation of any construction activities at the Site and updated as Site conditions change.

7.4.2 Site Security and Site Access

The Site is currently enclosed by a 6-foot chain-link fence installed on October 28, 2019. Additional fencing will be placed around any work areas that may extend beyond the existing fence. The location of the perimeter fence is presented on **Figure 7-1**.

Access to the project Site's work areas will be limited to APS, Jacobs, and contractor personnel. All other visitors, including utility and City personnel, will need to be escorted in Site work areas by a designated person selected by APS. All employees and visitors will be required to check-in and sign a visitor's log in the contractor's trailer. Only personnel with the proper training and safety equipment who have reviewed and signed the project HASP will be allowed access to the work areas. APS will coordinate Site activities with Customs and Border Protection (border patrol) and the Department of Homeland Security prior to construction activities.

The contractor will supply, install, and maintain all road markings, signs, and barriers to prevent vehicle and pedestrian traffic access to certain areas. During nonworking hours, the contractor will secure the Site work areas to ensure that unauthorized personnel, such as trespassers, vagrants, children, or animals, do not enter the Site. Additionally, the remediation contractor will coordinate with El Paso Natural Gas and Southwest Gas to protect the high-pressure gas pipelines.

7.4.3 Site Preparation

The following tasks will be implemented during the Site preparation phase; these activities are detailed in other sections of this RAP:

- The contractor will mobilize to the Site and prepare the Site for work activities.
- Site work areas are enclosed by a 6-foot chain-link fence. Additional temporary fencing will be installed were needed based on actual Site conditions at the time of excavation. The fence(s) will be covered with fence fabric to limit visibility into the work area and minimize dust migration into and out of the work area unless the border patrol requires a clear field of vision across the Site. A misting system will be installed on the top of the fence to help prevent dust from migrating offsite.
- Work, decontamination, and support areas will be identified and clearly marked.
- Temporary facilities and utilities, such as office trailers, sanitation facilities, power, lighting, and telephones will be installed, as necessary, for use by the onsite personnel.
- The Contractor will work with Southwest Gas to expose existing high-pressure gas line to positively confirm the location. Southwest Gas inspector will be present for any excavation work within 5 feet of the pipeline. Once the pipeline is exposed, deeper excavation can take place. Southwest Gas excavation guidance is provided in Appendix M.
- Existing trees and shrubs within the excavation work areas will be removed as needed with City approval and permits as required.
- Asphalt, wood, or concrete slabs within the excavation area will be removed.

7.4.4 Protection of Existing Site Features

All necessary precautions will be taken to protect the existing above- and below-ground structures surrounding the Site. Site features requiring protection during remedial activities will be identified and the necessary protective controls installed prior to excavation. The main features of concern are buried high-pressure gas lines and overhead electric lines.

7.4.5 Work, Decontamination, and Support Areas

Prior to beginning remedial activities, the Site will be divided into work, decontamination, and support areas as defined by the HASP. This section outlines the three areas to be established by APS, Jacobs, and the contractor.

7.4.5.1 Work Area

The work area is the portion of the Site where excavation activities will be conducted. The planned excavation will be performed in small sections to minimize the possibility of adverse effects caused by a significant rain event. Barricades with caution ribbon will be installed within the work area to designate an exclusion zone. To minimize the potential for cross contamination from the excavation area, the following procedures will be followed:

- Personnel not directly involved with the work activities will not be allowed within this zone.
- All personnel and personal vehicles will park in a designated lot outside the project work area. All personnel will enter near the construction trailers and sign-in daily.
- All personnel entering the exclusion zone will be required to wear appropriate PPE.
- Personnel leaving the exclusion zone will be decontaminated prior to exit.
- All PPE will be collected and disposed of properly.
- Every truck loaded for offsite disposal of impacted material will be dry decontaminated before the truck leaves the Site. Dry decontamination includes the truck, the trailer, and tires. All loads will be covered before leaving the Site. Tracking out material will be prevented by loading trucks on a clean gravel surface. In the event of rain, one of two options will be implemented:
  - **Option 1:** Suspend loading operations and offsite disposal of impacted material.
  - **Option 2:** Place 0.75-inch gravel on the ground between the loading point and the Site access point.
  - **Option 3:** Place and maintain shaker plates near the construction entrance.
- All equipment used to excavate impacted soil will stay within the exclusion zone. If the equipment leaves the exclusion zone or comes into contact with clean soil, the equipment will be decontaminated.

Impacted material will be segregated as described in Section 7.4.8. The contractor will excavate only the soil that can be loaded and hauled out the same day or placed in a lined stockpile area or roll-off container to minimize the amount of soil potentially causing fugitive odors and dust. Soil stockpiles or roll-off containers will be covered each night and when not in use.

7.4.5.2 Support Area

The support area is located outside the exclusion zone where no PPE is required. This area includes the construction trailers, designated eating areas, parking lot, material storage, visitors' area, and vehicle access.

7.4.5.3 Decontamination Area

The decontamination area will be located between the work area and the support area. All personnel will be required to enter and leave the work area through this access. If necessary, the contractor will set up a three-stage decontamination area with plastic bins that will be lined with plastic sheeting. The workers will be required to remove all PPE and equipment that was used within the work area. Boots will be rinsed and scrubbed with brushes to remove any residual contamination. All PPE will be disposed of properly. No smoking or eating will be allowed in the work or decontamination areas.

7.4.6 Excavation Activities

The excavation plan is designed to manage the uncertainties that typically accompany remediation of a site with a lengthy history of multiple activities. The excavation at the Site is designed to accomplish the RAOs by removing PAH and lead impacted soil that exceeds residential SRLs. The general areas proposed for excavation include the following:

- Excavate soil up to 5 feet bgs at the former south gas holder location near soil boring B-11.
- Excavate soil up to 15 feet bgs at the former meter house and southwest of the small purifiers area between the former gas holders near soil borings B-13 and B-17.
- Excavate soil up to 20 feet bgs east of the former small purifiers near soil boring B-24.
- Excavate soil up to 22 feet bgs at the former north gas holder location near soil boring B-12.
- Excavate soil up to 10 feet bgs at the former generator house and oil sump location (shown as Excavation Area DU-2).
- Excavate soil up to 20 feet bgs near the north fence line north of the former oil sump location.
- Excavate soil up to 7 feet bgs north of the north fence line and west of the boring B-21.
- Excavate soil up to 5 feet bgs north of the former generator house and soil boring B-15.

The proposed excavation areas are shown on **Figure 7-1**.

Historic locations of the remaining subsurface MGP features should be considered approximate. During the pre-design testing investigation, a flat concrete feature was present near the location of soil boring B-24 at ground surface. Soil boring B-24 was moved to the east of the feature to allow hand auger clearing; the historical reports had no record of this feature. Soil boring B-23 was advanced through soil; however, based on historical feature locations the former north gas holder foundation would have been located at boring B-23. The locations of former MGP structures are based on 1929 Sanborn Fire Insurance Company maps and provide approximate locations of known former MGP structures. Removal of subsurface MGP features will take place during excavation activities. Approximate locations of subsurface MGP features are shown on **Figure 7-1**.

7.4.6.1 Excavation

Based on the previous investigations and the pre-design testing investigation, Jacobs estimates that approximately 24,000 tons of impacted soil will be removed by the contractor and hauled to a special waste landfill at an APS-approved offsite treatment facility. Due to sloping and shoring requirements and field conditions, the estimated quantity of soil removed, the excavation time may vary. APS will develop an excavation plan with the contractor based on the following criteria:

- Health and safety requirements will be adhered to for the protection of workers, Site personnel, and the community (air monitoring, odor and dust control, noise).
- Underground and overhead lines will be avoided.
- Excavation will be performed to remove the material that exists at concentrations above the cleanup criteria for the Site.

The excavation plan is based on the following criteria:

- Contractor hours: 5 days per week, 10 hours per day
- Excavation rate: 100 to 300 tons per day
- Material offsite disposal: 5 to 15 trucks per day (average 20 tons per truck)

7.4.6.2 Debris Cleaning and Processing

Construction debris, such as concrete from demolition activities, buried concrete, abandoned utilities, and brick, will be removed and segregated during the excavation activities. This material will be visually inspected to evaluate whether the material is appropriate for disposal at a recycling facility or an APS-approved, locally permitted solid waste landfill. Debris that cannot go to a recycling facility or a locally permitted solid waste landfill because it is contaminated will be manifested as special waste and disposed of at a licensed landfill.

If material appears to contain ACM, or if transite (asbestos) pipe is encountered during the remedial activities, an AHERA-certified asbestos inspector will inspect the material or piping and collect samples of the material. If ACM is identified, a licensed asbestos abatement contractor will be contacted to remove and dispose of the ACM. The material will be double-bagged, labeled, manifested, and disposed of at an APS-approved disposal facility. If threshold quantities are exceeded, appropriate NESHAP notifications will be made to ADEQ.

7.4.7 Air Quality Monitoring

Air quality monitoring will be conducted during the remedial activities in accordance with the project HASP. Air monitoring is designed to identify and quantify airborne contaminants, evaluate the impact of Site activities on the worker, and reduce or eliminate the migration of dust and odors offsite. Real-time air monitoring of PAHs will be required during trenching, excavating, and loading of impacted soil. Additionally, during excavation at areas which had lead results above the residential SRL (soil at the former gas holders from soil borings B-11 and B-12), dust monitoring will be conducted to provide real time estimates of lead concentrations.

At no time will the contractor perform remediation activities without a designated Site Safety Coordinator (SSC) overseeing the work area. Daily safety meetings will be conducted to review air monitoring results with workers and discuss the planned work schedule for that day's activities. The SSC will be responsible for determining appropriate PPE and decontamination procedures. In addition, the SSC will conduct hourly air monitoring of the Site perimeter and document readings for VOCs, carbon monoxide, oxygen, lower explosive limit, dust, and noise. A copy of the perimeter air monitoring logs will be kept in the contractors' trailer, which will be available upon request and will become a part of the RAP documentation records.

7.4.7.1 Dust and Odor Control

Dust and odor controls will be implemented at the Site to ensure worker safety and minimize offsite emissions. The following mitigation measures will be implemented at the Site to control emissions:

- Continuously monitor the wind direction with a wind flag or electronic weather monitoring device for changes. In the absence of an electronic weather monitoring device, the wind direction, wind speed, barometric pressure, precipitation, and temperature will be downloaded daily from the local weather station website (http://www.wunderground.com/US/AZ) and recorded in the Site log.
- Minimize the size of excavations.
- Cover stockpile and roll-off containers with a permanent cover or plastic sheeting or a tarp when not in use.
- Install water misters at the fence line to intercept dust and odors prior to leaving the excavation area.
- Apply water alone or water with environmentally safe additives (for example, Envirotech Vapor Suppression, Simple Green, or equivalent) on the excavation area, haul roads, and roll-off containers to control dust and other emissions.
- Apply environmentally safe chemical suppressants or foams (for example, Eco Sorb, Citriclean, Rusmar or equivalent).
- Cover exposed areas with clean fill.
- Stop excavation activities if Site conditions are such that mitigation measures prove unsuccessful in controlling emissions.

The contractor will be responsible for performing all dust and odor controls during the remedial action. The effectiveness of dust and odor controls will be determined by the air monitoring results. Dust control activities will be performed in accordance with requirements specified by the City when applicable building permits are obtained for the excavation activities.

7.4.7.2 Air Monitoring

Health and Safety Air Monitoring (Active Work Areas)

A detailed description of the practices and procedures will be included in the site-specific HASP. The contractor will be responsible for monitoring its employees. At a minimum, each employee should have completed a 40-hour training course for hazardous waste site workers (Occupational Safety and Health Administration 29 CFR 1910.120) and all appropriate refresher courses, be part of a medical monitoring program, and be certified to wear a respirator. Health and safety monitoring may use following equipment:

- Photoionization detector (PID) for monitoring VOC levels in air
- Colorimetric tubes to identify specific types and concentrations of VOCs in the air
- Combustible gas indicator for monitoring oxygen, carbon monoxide, hydrogen sulfide, and explosivity levels
- Miniram dust meter (PDM-3 or equivalent) for real-time dust level monitoring
- Decibel meter to monitor noise levels

The contractor will monitor the work area at all times while excavation activities are being conducted. Additionally, the contractor will monitor the perimeter of the work area for odors and dust on an hourly basis during work activities. The results of the work area and perimeter monitoring will be documented and maintained onsite for the duration of the project. At the conclusion of the project, the records will be turned over to APS.

Baseline (Background) Air Monitoring

Baseline (background) monitoring will be conducted for the four monitoring locations identified for perimeter air sampling. Samples will be collected with high volume (HIVOL) samplers and analyzed using EPA Compendium Method TO-13A. Samples will be collected during the mobilization activities prior to any excavation at the Site. The background samples will be submitted to a qualified ADHS-licensed laboratory for analysis. Background sample results will be compared to the HIVOL air analytical results obtained during the remedial activities.

Background samples will also be collected using hand-held monitoring equipment as specified in the HASP for air monitoring. The data will be collected within the Site and at the upwind and downwind perimeter of the Site. The data will be recorded and stored onsite for comparison during the remedial activities.

Perimeter Air Monitoring

Perimeter air monitoring will be performed to verify compliance with project action levels, which were calculated based on a 1-year, 6-month, or 4-month exposure duration, as presented in **Table 7-3**. The EPA RSLs for air quality (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables) were used to calculate the action levels, based on an assumed 26-year residential exposure duration. This is the relevant update to the EPA Region 9 PRGs for Ambient Air Values, which were used previously.

The typical air monitoring positions will include one upwind sampler and one downwind sampler with respect to the prevailing wind direction, predominantly from west or east. Because of the Site's proximity to surrounding businesses and residents, four perimeter air monitoring stations may be used during excavation. The proposed air monitoring locations are shown on **Figure 7-3**. Sampling procedures, analytical methods, and QA/QC procedures are presented in the QAPP (Jacobs, 2019c).

Each sampling location will be equipped with a modified HIVOL sampler consisting of a sampling pump system with a flow range greater than 200 liters per minute, an orifice and magnehelic gauge to document continuous flow rate, and a sample module that includes a polyurethane foam (PUF) and/or XAD-2 cartridge and quartz filter. Air samples will be collected on an approximate 24-hour basis during

excavation and waste loading/hauling activities. Each sample will be analyzed for SVOCs by EPA Compendium Method TO-13A high-performance liquid chromatography (HPLC). PUF samplers will be used during all excavation activities.

VOCs were not detected above the residential SRLs or laboratory RLs during the pre-design sampling; however, if volatile emissions are suspected based on flame ionization detector/PID results, or significant odor, additional air samples will be collected at all monitoring locations. Baseline air samples will be collected prior to excavation where VOCs are suspected. Air samples will be collected in SUMMA canisters over an 8-hour period or the duration of the work day and analyzed by EPA Compendium Method TO-15. All air samples will be submitted to a qualified ADHS-licensed laboratory for analysis.

If asbestos pipe is found at the Site, an abatement contractor will be required to perform air monitoring. This monitoring may be conducted using phase contrast microscopy methods.

All air monitoring results will be immediately documented and maintained onsite for the duration of the project. At a minimum, documentation will include equipment calibration data, background concentrations, date of monitoring, monitoring results, monitoring locations, source description, air temperature, relative humidity, and wind direction.

Lead Monitoring

A Miniram dust meter (PDM-3 or equivalent) sampler will be used to monitor dust levels during excavation at DU-1 and DU-3 where soil lead results were above the residential SRL. The average of the maximum lead concentrations at each of the borings (B-11, B-12, B-13, B-17, B-23, and B-24) within the DU-1 and DU-3 areas will be used to determine real-time dust levels. The six highest lead results had an average of 205.1 mg/kg lead in soil. Using 205.1 mg/kg of lead in soil and the NAAQS of 0.15 microgram per cubic meter of lead in soil corresponds to a dust limit of 731 micrograms per cubic meter in soil as total suspended particulates. Dust will be monitored during excavation of DU-1 and DU-3 to confirm lead is below the NAAQS.

7.4.8 Soil Segregating

This section provides a summary of waste characteristics from pre-design testing investigation sampling results, waste segregation and waste types, and a summary of soil segregation methods and field screening protocols to appropriately classify the excavated soil.

In April 2000, the U.S. Court of Appeals for the District of Columbia Circuit vacated the use of the hazardous waste toxicity characteristic for the evaluation of MGP waste. Therefore, MGP waste is not considered a hazardous waste unless it exhibits the characteristics of ignitability, corrosivity, or reactivity. This was confirmed by ADEQ in a letter to APS, dated April 16, 2001 (ADEQ, 2001) (**Appendix N**). Regardless of the regulatory definition, APS has elected to dispose of any soil exceeding the TCLP limits for hazardous waste of 0.5 mg/L benzene or 5 mg/L lead at a hazardous waste facility as a special waste PCS, in accordance with Arizona special waste generator and transportation requirements and using Arizona special waste manifests.

7.4.8.1 Summary of Waste Characteristics from Pre-Design Testing Investigation Sampling

Waste characterization data were collected during the pre-design testing investigation at locations anticipated to have the highest PAH results. These included samples collected at, but not limited to, the former gas holders, meter house, generator house, adjacent to the purifiers, and adjacent to previous sample location SS-5. Samples analyzed for waste characterization are presented in **Table 2-9.**

In addition to waste characterization samples, multiple soil samples were collected and analyzed for total VOCs and metals during previous site investigations and/or the pre-design testing investigation. The total concentrations of select metals were compared to the TCLP limits to evaluate the potential for waste generated from that area to exceed a TCLP limit. If the total concentration of a compound in the soil

exceeded the TCLP hazardous waste limit by 20 times or more, the soil is considered to have the potential to exceed the TCLP limit and may need to be disposed of as a hazardous waste.

Samples collected at B11-2.5-3.0 and B12-7.5-8.0 had lead results above the residential SRL of 400 mg/kg. These samples were analyzed for TCLP metals in addition to total metals to determine the leaching potential of soil of lead at the Site. The TCLP lead results for the samples above the residential SRL were 0.920 and 0.128 mg/L, below the TCLP hazardous waste toxicity characteristic of 5 mg/L for lead. All metals from the samples were below the hazardous waste toxicity characteristic. Based on TCLP lead results, no areas at the Site have been identified as requiring segregation due to a potential for exceeding the TCLP limits for lead (or other compounds). No areas at the Site have been identified as hazardous waste.

7.4.8.2 Waste Segregation and Waste Types

The goal of waste segregation is to effectively and efficiently identify and segregate excavated soil into one of the five site-specific waste classifications. In general, the majority of the excavated soil will meet the requirements to be classified as a special waste PCS and transported offsite to a licensed landfill.

For the purposes of waste classification at the Site, excavated soil will be segregated into the following five classifications:

- Non-impacted soil
- Construction debris
- ACM
- Special waste PCS
- Special waste PCS that exceeds 0.5 mg/L TCLP for benzene or 5 mg/L TCLP for lead

Non-impacted Soil

Non-impacted soil is soil that contains concentrations of indicator compounds below cleanup criteria, as described in Section 7.2. An example of non-impacted soil would be topsoil overlying impacted soil that does not contain MGP-related compounds. Soil that is classified as non-impacted may be used as backfill.

Construction Debris

Construction debris at the Site will consist of concrete slabs, abandoned pipe, steel, and possibly ACM if encountered (piping and building materials). This material, if visually free of contamination, with the exception of ACM, will be separated from the soil and disposed of, or recycled, at an approved facility. Construction debris that is not visually free of contaminants will be handled as an Arizona Special Waste and transported to an approved landfill for disposal.

Asbestos-Containing Material

Any ACM will be handled according to regulatory requirements by a licensed asbestos abatement contractor, as described in Section 7.3.2, and disposed of at an approved facility.

Special Waste PCS

Soil with concentrations of PAH compounds above non-residential SRLs will be classified as an Arizona special waste PCS. Special waste PCS will be transported offsite for disposal at a landfill licensed to receive special waste PCS. Soil with concentrations above residential SRLs, but below non-residential SRLs, can be classified as an Arizona Solid Waste PCS and transported offsite to a solid waste landfill in accordance with Arizona special waste requirements. However, because soil throughout most of the Site has exceeded non-residential SRLs, APS will likely dispose of all excavated soil exceeding residential or non-residential SRLs as special waste PCS.

Special Waste Soil that Exceeds 5 mg/L TCLP for Lead

Soil that exceeds 5 mg/L TCLP lead will be managed as a special waste PCS but will be segregated from the other soil and disposed of at a hazardous waste facility. Soil that has the potential to contain greater than 5 mg/L TCLP lead will be stored in roll-off containers separate from other wastes, pending analysis. Based on pre-design testing investigation sampling analytical data, including lead TCLP results from the two lead results above the residential SRL, no areas are anticipated to require segregation based on TCLP results less than 5 mg/L.

7.4.8.3 Methods of Soil Segregation

Soil segregation will occur through the use of several methods during remedial activities. To achieve the goals of the soil segregation process, the following soil segregation procedures will be used:

- Field evaluation of physical characteristics
- Direct-read field measurements
- Fixed-base laboratory prescreening
- TCLP determination for lead at a fixed-base laboratory

A flow chart for the segregation process is presented on **Figure 7-4**. The soil segregation process has been developed based on the results of previous investigations and the pre-design testing investigation results. The segregation process has been designed so that field staff will make the appropriate classification of excavated materials, while minimizing the generation of dust and odors and the addition of water to the soil.

Field Evaluation of Physical Characteristics

The APS consultant will preliminarily classify the physical characteristics of the soil using visual indicators. The presence of coal tar or lampblack and lead can be observed by a black or dark brown staining of the soil. Based on previous remediation at other MGP sites, the tar-impacted soil exhibits a very strong odor. Physical characteristic screening will be performed at a minimum sampling frequency of every 5 to 10 tons. During the pre-design testing investigation very little stained soil and/or odor was observed.

Direct-read Field Measurement

Field physical characteristics screening will be supplemented with field monitoring using direct-read instruments. Soil that is visibly stained will be tested by headspace analysis using an organic vapor analyzer or organic vapor monitor. Direct-read field measurements will be collected at a frequency of approximately every 30 to 50 tons. Headspace analysis will also be performed on a portion of the soil samples that do not appear to be visibly stained to support the identification of soil impacted by MGP-related compounds.

Fixed-Base Laboratory Prescreening

During soil remediation activities at the Site, the waste determination of excavated soil will need to be accurately and efficiently performed. The field method for waste determination of excavated soil may include the use of a fixed-base laboratory with a 24- to 48-hour turnaround time to determine the total concentrations of PAHs, and lead.

In accordance with EPA Test Method 1311, Section 1.2 for TCLP analysis, a total constituent analysis will be used to prescreen soil identified as potentially containing lead and/or benzene above TCLP limits to determine which soil will be further analyzed for TCLP lead. Composite samples will be collected from the excavated soil placed in roll-off containers and analyzed at a fixed-base laboratory for benzene and/or lead with a 24- to 48-hour turnaround-time. The total benzene and/or total lead concentration will be divided by 20 to calculate the maximum leachable concentration for unsaturated soil. Soil that has a calculated maximum leachable lead level of less than the regulatory lead level for toxicity characteristic for a hazardous waste (5 mg/L) will be classified as a special waste PCS.

Lead TCLP Confirmation at Fixed-Base Laboratory

If results from the fixed-base laboratory for total lead indicate that the soil potentially contains a concentration that may exceed the TCLP limit, a waste determination sample will be collected and submitted to a fixed-base laboratory for TCLP analysis. The TCLP analysis will be performed on a rush basis, and the results are anticipated to be received within approximately 3 to 5 days.

Based on the results of the TCLP analysis, the soil will be disposed of at a facility licensed to receive hazardous waste if concentrations exceed the TCLP level for any compounds or managed as a special waste PCS for disposal at a licensed landfill if the results do not exceed TCLP levels.

7.4.8.4 Onsite Storage and Handling

Soil will be segregated into roll-off containers or small stockpiles based on visual observations, odor, and PID readings. Stockpile volumes will coincide with the volume of material planned for offsite disposal on a daily basis. Non-impacted material will be placed outside the work area and may be used as backfill material at the completion of the excavation. Soil evaluated to be special waste PCS may be excavated and directly loaded into trucks. Excavated soil with the potential of exceeding 5 mg/L TCLP lead will be placed in lined roll-off containers. Any stockpiles, including debris, will be bermed and covered daily with 6-mil plastic sheeting to prevent air emissions and to control run-on/run-off in the storage area.

7.4.8.5 Load Out of Excavated Soil and Import of Borrow Fill

Special waste PCS will be direct loaded as the soil is excavated unless the soil has the potential to exceed a TCLP concentration for benzene or lead as described previously. The special waste PCS will be loaded in the trucks and hauled daily to a special waste landfill. The material to be disposed offsite will be weighed prior to entering the facility. The truck will then be weighed after dumping prior to leaving the facility. The gross, tare, and net weight will be recorded by the facility and submitted with the treatment/disposal invoice.

Borrow fill imported to the Site for backfill will be required to be weighed by the contractor as documentation for payment. The weight tickets from the waste and borrow fill hauling will be used to estimate the volume of material removed from the excavation.

Transportation of waste to offsite disposal facilities or transportation of imported borrow fill will be conducted on an approved haul route. Neither the disposal facilities (that is, the recycling facility, APS-approved local permitted solid waste landfill, special waste landfill, or EPA-permitted treatment, storage, and disposal facility) nor the borrow site have been determined for this project at the time of publication of this RAP. Therefore, the transportation routes for the borrow fill have not been established. Before transportation activities begin, a transportation plan that details the hauling routes for both offsite waste disposal and imported borrow fill will be submitted by APS to the City for approval. The objective of this plan is to control the transport of imported borrow fill and to control, transport, treat, and/or dispose of all materials according to the pertinent regulations and in an environmentally safe manner. All waste material will be controlled in strict compliance with federal, state, and local regulations, statutes, and ordinances.

Trucks used for the offsite transportation of contaminated soil and debris will remain outside of the excavation on clean areas at all times to minimize the need to decontaminate the truck tires. If necessary, the truck tires will be dry-decontaminated with brushes by the contractor prior to leaving the Site. During loading, dust and odor emissions will be monitored and mitigated as necessary, according to Section 7.4.7.1. The hauling truck trailers will be fully covered prior to leaving the Site. All special waste PCS will be manifested and transported to a special waste landfill, such as Waste Management Marana Regional Landfill. Material that exceeds 5 mg/L TCLP for lead will be trucked to an EPA-permitted treatment, storage, and disposal facility.

Each disposal facility will be required to submit a certified weight ticket for each load received from the Site. The facility will fax a load count to APS daily that includes the date and time the shipment arrived, the manifest number, the truck and trailer number, and weights for tracking purposes.

In the event of an emergency or spill during waste transportation, the driver of the waste hauling truck will use the following procedures:

- Park the vehicle in the most secure area available, away from homes, traffic, waterways, and businesses.
- Stay with the vehicle until appropriate support has arrived; move a safe distance away from the vehicle or spill material if imminent danger exists.
- Notify the appropriate emergency contacts. The following information should be available to the emergency contacts:
  - Location of accident/emergency
  - Quantity and type of spill
  - Nature and extent of injuries or property damage
  - Manifest number
  - Locations of nearby receptors, such as people and water channels
  - Contact number for the driver (that is, a cell phone or radio)

All truck drivers will be required to review, adhere to, and sign a Truck Driver Policy and Orientation procedure prior to working on the Site.

7.5 Sampling and Analysis Procedures

Detailed sampling procedures for soil, water, air, and waste, along with laboratory analytical methods and QA/QC procedures, are located in the QAPP (Jacobs, 2019c).

7.5.1 Verification Sampling

DUs were established for the Site to assist with confirmation of excavation extent. A DU is an area or volume that is defined according to the environmental concerns posed by the contaminants present and the intended use of the Site. A DU is implicit in grid sampling approaches using discrete samples. Considerations in identifying DUs for the Site included the following:

- Utility locations
- Site physical characteristics that could influence the distribution of contaminant
- Sampling and analytical results from Site investigations
- Site cleanup criteria
- Planned depths of excavation throughout the Site

After DUs are selected and excavated representative sampling methods are used to determine if soil is below residential SRLs. If results are below SRLs, area-wide contaminant concentrations (referred to as EPCs) are calculated across each DU for each COC. The EPCs are compared with applicable SRLs to make decisions regarding the need for any subsequent remedial action (that is, excavation) within that particular DU. Proposed DUs are shown on **Figure 7-1**.

7.5.1.1 Decision Unit Selection and Size

DU selection for the Site was based on a consideration of the relevant Site data and is defined as an area where a decision is to be made regarding remedial activities and the extent of excavation required in that area. The DUs were designed to logically divide the known or suspected areas of PAH contamination. A preliminary DU size of no larger than 0.25 acre (10,890 square feet) was targeted. Due to unknowns such as additional soil data generated during the remediation and potential changes to Site access from utilities, DU selection and size are subject to revision based on field conditions.

The Site was divided into four primary DUs, described as follows, based on four general excavation areas. Proposed excavation areas are shown on the proposed excavation plan on **Figure 7-1** and excavation depths within each DU area are shown on **Figure 7-2**. For each of the proposed DU areas, the bottom and the sidewall of the excavation will be managed as subsets of the main DU. The bottom of

the excavated DU area will be evaluated (such as DU-1B), where “B” denotes the base of the DU area, and the sidewall of the excavated DU area will be evaluated (such as DU-1S), where “S” denotes the sidewall of the excavated DU area.

- **DU-1** is located parallel to the gas line at the former southern gas holder, meter house, small purifiers, and northern gas holder. DU-1 will be excavated between 5 feet and 22 feet bgs. The excavation will remove half the southern gas holder foundation, the meter house and small purifiers subsurface foundations and the northern gas holder foundation. DU-1 was aligned parallel to the gas line to allow efficient soil removal in the vicinity of the gas line.
- **DU-2** is located at the former generator house. DU-2 will be excavated up to 10 feet bgs at the former generator house area. The excavation will remove the remaining generator house subsurface foundation and soil near the former oil sump location where PAH concentrations above the residential SRL were detected. Soil results from soil borings B-14, B-15, and B-16 at DU-2 were below the non-residential SRLs and may be transported as an Arizona solid waste PCS.
- **DU-3** will be excavated between 5 feet and 20 feet bgs at the former southern gas holder location and east of the small purifiers, parallel to the DU-1. The excavation will remove soil where concentrations of PAHs and lead were above the residential SRLs.
- **DU-4** is located along the northern border of the Site and south of the wash. Excavation of DU-4 will remove soil associated with SRL exceedances observed in borings B20 and B21 during the pre-design investigation.
- **DU-5** is located between DU-2 and DU-4. Because of the lack of soil data in the area between DU-2 and DU-4, test trenching at DU-5 will determine the general extent of the excavation area.

7.5.1.2 Sampling Frequency and Excavation Rationale

Excavation Bottom

A minimum of eight discrete soil samples will be collected from the bottom of each excavation DU. The EPC for each COC will be calculated at the DU bottom and will be calculated as the 95% UCL of the arithmetic mean concentration using EPA’s ProUCL Version 5.1 statistical software package (EPA, 2015). No additional excavation will be necessary if the 95% UCL for the first set of samples is below the residential SRL for each COC. If the 95% UCL calculation result is above the residential SRL for any COC, the entire DU (the base) will be excavated further, and eight additional samples will be collected. A 95% UCL will be calculated for the new samples and compared to the residential SRL. Sampling and excavation will continue until the EPC is below the residential COC SRL.

Excavation Sidewall

The minimum number of samples collected from sidewall DUs will be based on the total unexcavated perimeter of the DU and the guidance provided in the Table 2 of the Wyoming Department of Environmental Quality VRP Fact Sheet 10, *Soil Confirmation Sampling Guidelines* (WDEQ, 2016), presented as follows:

Total Linear Feet of Sidewalls	Number of Samples
X < 100	4
100 ≤ X < 200	5
200 ≤ X < 300	6
300 ≤ X < 500	7
500 ≤ X	8

A minimum of eight sidewall samples will be collected for statistical analysis. The EPC for each COC will be calculated at the DU sidewall and will be calculated as the 95% UCL of the arithmetic mean

concentration using EPA's ProUCL Version 5.1 statistical software package (EPA, 2015). No additional excavation will be necessary if the 95% UCL for the first set of sidewall samples is below the residential SRL for each COC. If the 95% UCL calculation result is above the residential SRL for any COC, the entire DU (the sidewalls) will be excavated further, and additional samples will be collected. A 95% UCL will be calculated for the additional set of samples and compared to the residential SRL. Sampling and excavation will continue until the EPC is below the residential SRL.

7.5.2 Soil Sampling Collection Methods

Soil samples will be collected using disposable scoops (where excavations can be accessed safely) or collected from an excavator bucket (where excavations cannot be accessed safely). The sampling method used will depend on the location of the sample, the depth of the excavation, and the type of sample required. This section describes each of the sampling methods that will be used.

7.5.2.1 Disposable Plastic or Stainless-Steel Scoop Samples

When bottom or sidewall samples are required, and safe access is available, disposable scoops will be used for sample collection into a laboratory-provided sample jar and submitted to the fixed-base laboratory. The following describes the sampling method:

- The sample with be collected using a disposable stainless-steel or plastic scoop and placed directly into a laboratory provided, certified, pre-cleaned 8-ounce (oz) jar.
- If VOC analysis is required, in-field methanol extraction will be used. The fixed-base laboratory will supply amber volatile organic analyte vials that contain a laboratory measured volume of methanol and dedicated laboratory provided sampling tee. Remove the lid from the amber vial and using the laboratory provided sample tee, collect the prescribed volume of soil, placing the soil in the vial using the sampling tee. Replace the lid and gently agitate the volatile organic analyte vial back and forth for approximately 10 seconds.

7.5.2.2 Backhoe Bucket and Auger Samples

During excavation activities if safe access to excavations is not possible a backhoe bucket may be used to collect verification soil samples. It also may be necessary to collect verification samples from a backhoe bucket or auger flights if the geometry of the excavation prohibits safe access of personnel. The following process describes the sampling technique to be used to collect backhoe bucket samples during the remedial activities:

- Collect soil samples from the backhoe bucket or auger flights using a disposable stainless-steel or plastic scoop. Place the soil directly into a pre-cleaned 8-oz sample jar.
- Use a laboratory provided methanol extraction kit for VOC sampling, if needed.
- Label each sample, log on a chain-of-custody form, and place on ice in a cooler or in a sample refrigerator and maintain at approximately 4 degrees Celsius (°C).

7.5.2.3 Stockpile or Roll-off Container Samples

When soil samples are to be collected from stockpile or roll-off containers, they will be collected as a composite sample. The composite sample will be composed of soil that is collected from a minimum of four separate locations in the stockpile or roll-off container.

- Collect an equal volume of soil from each of the stockpile or roll-off container sample locations using a disposable stainless-steel or plastic scoop and place directly into a pre-cleaned 8-oz jar.
- For stockpile and roll-off container samples, make a special note on the chain of custody to "thoroughly mix sample." This will notify the laboratory to homogenize the sample prior to extraction and analysis.

- When VOC analysis is required from a roll-off container sample, collect each sampling location individually. Notify the laboratory on the chain of custody to “composite all VOC samples” prior to analysis.
- Label the sample, log on a chain-of-custody form, and place on ice in a cooler or in a sample refrigerator and maintain at approximately 4°C.

7.5.3 Air Sampling Procedures

Baseline air samples will be collected from ambient air at each perimeter monitoring station prior to any excavation or remedial activities at the Site. The samples will be used to establish baseline concentrations of PAHs and dust in the ambient air. Baseline data will be obtained for PAHs using EPA Compendium Method TO-13A HPLC and dust using a Miniram dust meter. If VOC sampling is required, Compendium Method TO-15 will be used if needed.

7.5.3.1 High Volume Sampling

Continuous PAH air sampling during remedial activities will be conducted using HIVOL sampling as follows:

- If the HIVOL unit is not running (typically on Monday mornings), turn on the unit and allow it to warm up for 2 to 3 minutes before logging any information.
- If the HIVOL unit is running (Tuesday through Friday), record the final magnehelic, timer reading, and time, and then turn off the HIVOL unit.
- Remove the PUF tube and quartz filter from the HIVOL unit.
- Calibrate the airflow through the HIVOL unit per the manufacturer’s specifications.
- Put on a pair of powder-free nitrile gloves.
- Decontaminate all parts up-flow of the PUF tube using pesticide-grade hexane.
- Install a virgin PUF tube and quartz filter on the HIVOL unit.
- Turn on the HIVOL unit and record the magnehelic gauge reading, time, timer reading, and location in the logbook for calculation of the total flow volume through the sampler.
- Calculate the total flow volume and enter on the chain of custody.
- Ship the PUF tubes and quartz filters to the fixed-base laboratory within 24 hours.

7.5.3.2 Dust Sampling

Continuous dust air sampling will be conducted during all excavation activities at DU-1 and DU-3. Dust air sampling will be conducted using a Miniram dust meter (PDM-3 or equivalent) sampler.

- Record dust readings in the air sampling field logbook during excavation activities at regular intervals and at times of high winds.
- Calibrate Miniram dust meter (PDM-3 or equivalent) sampler per manufacturers specification.

7.5.3.3 SUMMA Canister Sampling

Previous Site investigations and the pre-design testing investigation indicate VOCs are not present at the Site and baseline SUMMA canister sampling is not anticipated. If VOCs are suspected at the time of excavation based on odor or PID direct field readings, air sampling using SUMMA canisters will be performed when VOCs are suspected to be present in the excavation. Six-liter SUMMA canisters would be used if needed to collect the samples for TO-15 analysis. The SUMMA canisters will be filled using a regulator calibrated by the fixed-base laboratory, allowing a constant flow of air into the canister during excavation activities. Both 8-hour and 12-hour regulators are available. The regulator used will depend on the length of time needed to handle the soil. If SUMMA canisters are required, baseline VOC sampling

will be conducted when excavation activities are not occurring. The sampling shall be carried out as follows:

- Attach the regulator to a 6-liter SUMMA canister.
- Place one SUMMA canister at each HIVOL sampling location approximately 4 feet off the ground and note the location in the logbook.
- Open the regulator and record the initial vacuum reading and start time.
- When the sampling period is over, record the final vacuum reading, close the regulator, and record the stop time.
- Remove the regulator.
- Secure the SUMMA canister with a brass or stainless-steel nut provided by the laboratory.
- Ship the SUMMA canisters to the fixed-base laboratory within 24 hours.

7.5.3.4 Direct-Read Instruments

Direct-read instruments will be used during the remedial activities to protect workers, check for hazardous environments, and screen soil samples. The equipment will include a PID and hydrogen sulfide, oxygen, carbon monoxide, and percent-lower explosive limit sensors. Calibration of these sensors will occur once per day when in regular use. Any instrument that exhibits erratic behavior will be field calibrated. Periodic cleaning of the PID lamp and use of water traps will prolong lamp and sensor life, as well as improve the accuracy of the readings. Detailed descriptions of the procedures and methods to use for direct-read instruments are located in the site-specific HASP.

7.5.4 Quality Assurance/Quality Control Sample Collection Procedures

In accordance with the QAPP (Jacobs, 2019c), QA/QC samples will be collected in the following manner:

- Collect field or rinsate blanks using distilled or deionized laboratory provided water. Collect the sample by pouring the water into the sample containers while onsite.
- Collect equipment blanks by pouring distilled or deionized water provided by the laboratory over the decontaminated sampling equipment (if disposable equipment is not used) or other sampling device and into the appropriate bottles.
- Collect soil and water blind field duplicate samples at a frequency of 1 duplicate sample per 10 samples to assess laboratory precision. Collect the duplicate samples following the same method described for the field samples.
- Provide appropriate sample volume to the laboratory to allow matrix spike/matrix spike duplicate analysis to be performed on all the verification samples. Confirm with the laboratory prior to sampling for laboratory specific requirements.

Trip blanks will be provided by the fixed-base laboratory and will accompany shipments of samples for VOC or BTEX analysis. Temperature blanks will accompany all environmental samples submitted to the laboratory for chemical analysis.

7.5.5 Fixed-base Laboratory Analyses

7.5.5.1 Soil Screening Analyses

A local ADHS-licensed fixed-base laboratory may be used for screening. The fixed-base laboratory would screen samples using the following methods:

- PAHs using EPA Method 8270C-SIM
- BTEX using EPA Method 8021B (if needed)
- VOCs using EPA Method 8260C (if needed)

- Lead using EPA Method 6020

7.5.5.2 Soil Verification Analyses

Verification analyses will be completed by an ADHS-licensed, fixed-base laboratory. The verification samples will be collected from the excavation bottom and perimeter sidewalls, as applicable, in areas that have been screened by the mobile or local fixed-base laboratory or that show no visual signs of impact from MGP-related compounds. The fixed-base laboratory would perform verification analysis using the following methods:

- PAHs using EPA Method 8270C-SIM
- Lead using EPA Method 6020 (DU-1 and DU-3 where elevated lead results were reported)

7.5.5.3 Air Sampling Analyses

Throughout the remediation activities, various air samples will be collected. The types of materials encountered will dictate the analyses performed on these samples. Air samples may be submitted to the ADHS-licensed, fixed-base laboratory for analyses of PAHs using EPA Compendium Method TO-13A.

7.5.5.4 Waste Characterization Analyses

In addition to verification sampling, soil samples will be submitted to the fixed-base laboratory for waste characterization to ensure the proper handling of waste material. Depending on the sample location and former analytical results, some or all of the following analyses will be used for waste characterization:

- PAHs using EPA 8270C-SIM
- Totals RCRA 8 Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) using EPA Method 6010B/7170A
- Total VOCs using EPA GC Method 8021B or GC/MS Method 8260B
- TPH using ADHS Method 8015AZR1
- PCB using EPA 8082
- TCLP VOCs using EPA Method 1311/8021B or 8260B (if required)
- TCLP RCRA 8 Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) using EPA Method 1311/6010C/7471A (if required)
- Paint filter using EPA Method 9095
- Ignitability as defined in SW-846 Chapter 7.1.2
- pH using EPA Method 9045B (soil containing free liquids)
- Total cyanide using EPA Method 9014

If the constituents analyzed for total VOCs or metals meet or exceed 20 times the RCRA characteristics levels, then TCLP VOCs or metals will be analyzed.

7.5.6 Data Verification and Data Validation

Data verification and data validation will be performed throughout the project on the analytical data reported by the laboratories. Data verification and data validation will be used to ensure, through examination and objective evidence, that data are of sufficient quality to support decisions based on data quality objectives (DQOs) presented herein and in the QAPP (Jacobs, 2019c). Data verification will be used to evaluate the data for completeness, correctness, and conformance according to the method, procedural, and/or contractual requirements between the laboratory and APS. Data validation is an analyte-specific and sample-specific data evaluation process used to confirm that particular requirements for the specific intended use of the data are met.

The project chemist will be responsible for oversight of the data verification and validation effort. Data verification and validation will be performed in accordance with the ADEQ data verification and data validation checklists included in the QAPP and will follow the QA/QC documentation outlined in the EPA Region 9 *Laboratory Documentation Required for Data Evaluation R9QA/00*, dated August 2001 (EPA, 2001b). The use of these checklists and appropriate laboratory documentation will standardize the data verification and validation process and minimize any discrepancy that may result between different data validators. A level III data validation will be performed on soil confirmation sampling and air as described in the QAPP.

Data validation will be carried out when the data packages are received from the laboratory and will be performed per analytical batch using the summary results of calibration and laboratory QA/QC, as well as those of the associated field samples. Data validation procedures will include the following:

- Review of the data package for completeness
- Review of chain-of-custody records for discrepancies that might impact data quality
- Review for compliance with holding time and QC frequency requirements
- Evaluation of all calibration and QC summary results against the project requirements
- Qualification of the data using appropriate qualifier flags, as necessary, to reflect data usability limitations
- Initiation of corrective actions, as necessary, based on the data review findings

DQOs will be used as a guide for data validation. The examination will focus on validating the degree to which the DQOs have been achieved, particularly the QA/QC analytical results. The DQO guidelines allow for assessment of the confidence in the soil, air, and groundwater sample data sets. The DQOs are precision, accuracy, representativeness, completeness, and comparability, and represent qualitative and quantitative objectives that ensure the data generated during this investigation meet the needs of the project. For this project, the DQOs are defined as follows:

- **Precision** is a measure of the reproducibility of concentrations reported for duplicate soil and groundwater samples collected from the same location. Precision is calculated by determining the relative percent difference (RPD) between duplicate samples. The proposed precision objective for groundwater is an RPD of 20 percent for field duplicates. The proposed precision objective for soil is an RPD of 35 percent for field duplicates.
- **Accuracy** is the degree to which the measurement data approaches the “true” value for each analyte. For soil samples, accuracy is assessed by calculating the percent recovery for a sample spiked with the analyte of concern (matrix spike). For soil, air, and groundwater samples, the accuracy objective will vary by analysis and compound. The accuracy objectives for this project are presented in Tables 3-4 through 3-6 in the QAPP for APS Arizona MGP sites (Jacobs, 2019c).
- **Representativeness** refers to the comparability of the sample collection procedures to those delineated in the RAP and to the degree which the analytical data represent the subsurface contaminant concentrations. Representativeness will be accomplished by using consistent field sampling and analytical procedures for soil, air, and groundwater samples.
- **Completeness** is defined as the ratio of acceptable validated laboratory measurements to the total number of planned measurements for this investigation. The completeness objective for the soil, air, and groundwater samples collected during this investigation is at least 90 percent.
- **Comparability** is an evaluation of the relative consistency of the laboratory measurement data. Because comparability cannot be measured quantitatively, professional judgment is relied upon. Internal comparability will be achieved for soil by adhering to consistent sample collection procedures and analyses methods throughout the remediation.

7.6 Site Restoration and Post-Remediation Activities

Site restoration and post-remediation activities include backfilling and restoring the Site, demobilization, post-closure monitoring, and preparation of a report documenting the remediation activities.

7.6.1 Excavation Backfilling

The contractor will be responsible for identifying an offsite source of suitable fill material that is free of contamination. Prior to beginning excavation activities, APS will review and approve the import source of clean fill. The soil proposed for use as backfill at the Site will be sampled and analyzed to confirm that it does not contain COCs associated with the Site or other likely contaminants. The potential backfill will be sampled and analyzed for the following constituents:

- PAHs using EPA Method 8270C-SIM
- PCBs using EPA Method 8082
- Pesticides using EPA Method 8081A or 8081B
- Herbicides using EPA Method 8151A
- Total VOCs using EPA GC Method 8021B or GC/MS Method 8260B
- TPH using ADHS Method 8015AZR1
- Total Metals using EPA Method 6010B/7170A

The soil will be considered acceptable for use as backfill if concentrations of the listed analytes, except for metals, are not detected above the RLs listed in the QAPP (Jacobs, 2019c). Metals concentrations must be within the ranges identified in the Evaluation of Background Metal Concentrations in Arizona Soil (ADEQ, 1991) and below the residential SRLs and GPLs.

Upon approval, the contractor will schedule delivery of the import material to the Site for backfill purposes. APS will require the contactor to periodically collect soil samples from the import source and submit samples to a fixed-base laboratory for analysis. Approximately 12 samples will be collected for the first 5,000 cubic yards of fill material and one sample for each additional 1,000 cubic yards (DTSC, 2001). The constituents analyzed and sample frequency may be adjusted based on the source of the backfill (that is, existing commercial gravel pits). The location from which the backfill originates will be documented in the Site logbook.

The contractor will backfill the excavation areas as soon as practical to limit the amount of open excavation. The excavation can be backfilled only after confirmation sampling, as described in Section 7.5.1.2, verifies that Site cleanup criteria have been met. The backfilled area will be approximately the same elevation as the existing topography in accordance with the City-approved grading plan. The Site surface will be covered with aggregate base rock to control dust and erosion.

7.6.2 Demobilization

Following the completion of remedial activities, the contractor will demobilize from the Site. The following activities will be performed as part of demobilization:

- Removal of construction trailer(s) and supporting structures (electric, communication, and similar) from the Site
- Removal of the Site security fence
- Demobilization of excavation and material processing equipment, decontamination equipment, safety equipment, sampling equipment, and monitoring equipment

Performance of a final review of the work and the Site, which will include a meeting between the contractor, Jacobs, and APS to assess the scope of work and identify and resolve any potential conflicts or questions that may remain.

7.6.3 Reporting

A report will be prepared to document the remedial activities conducted at the Site. The report will include, but will not be limited to, the following:

- Detailed description of the volume of soil that was excavated
- Disposition of the soil and other wastes (that is, decontamination water)
- Excavation backfilling and Site restoration activities
- Sampling location maps
- Analytical data from verification sampling
- Data validation reports
- Waste manifests, bills of lading, and certificates of destruction for wastes
- Copies of all applicable permits that were obtained
- Copies of discharge and other reports generated during the remedial activities
- Documentation of sample collection methods, soil segregation procedures, dewatering activities, if any
- Discussion regarding the cleanup criteria, describing areas in which the criteria were not met, if any, and additional recommendations if cleanup criteria were not met
- Documentation of discussions and/or agreements with regulatory agencies including ADEQ and the City
- Documentation of community involvement during public outreach activities

7.7 Site Remediation Schedule

The schedule for major site remediation activities is anticipated as follows:

- ADEQ Approval of RAP – January/February 2020
- Preparation of Remedial Design – January/February 2020
- Community Involvement and Public Comment Period – February/March 2020
- Remedial Construction – March through August 2020
- Closure Report – October 2020

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Tables

Table 1-1. Summary of Operational History

APS Douglas Former MGP Site, Douglas, Arizona

Year	Site Structure	Site Activities
1905-1908	No information available.	Manufactured gas operations began between 1905 and 1908 and continued until the 1930s[1].
1929	Generator house, one large purifier, two small purifiers, a meter house, a steel crude oil tank, two gas holders, and a concrete shed [2].	Manufactured gas operations continued at the site[1,2]
1930	Generator house, one large purifier, two small purifiers, a meter house, a steel crude oil tank, two gas holders, and a concrete shed [2].	Arizona Edison Company controlled by Peoples Light and Power Corporation. Annual Production 51.5377 million cubic feet and annual sales 43.9241 million cubic feet[4].
1938	Generator house, one large purifier, two small purifiers, a meter house, a steel crude oil tank, two gas holders, and a concrete shed [2].	Arizona Edison Company (natural) Natural gas purchased from El Paso Natural Gas Company for resale. Annual sales 115.9389 million cubic feet[4]. Supplies Douglas.
1940	Generator house, one large purifier, two small purifiers, a meter house, a steel crude oil tank, two gas holders, and a concrete shed [2].	Arizona Edison Company Inc. natural gas purchased from El Paso Natural Gas Company for resale. Annual sales 135.4454 million cubic feet[4]. Supplies Douglas.
1944-1947	Concrete shed, large purifier, and possibly the meter house[1,2]. Remaining site structures are not indicated on the 1947 Sanborn map.	Manufactured gas operations were discontinued prior to 1947. Annual gas production ranged from 13.7 million cubic feet in 1910 to 51.5 million cubic feet in 1930[1,4].
1945	Concrete shed, large purifier, and possibly the meter house[1,2].	Arizona Edison Company Inc. natural gas purchased from El Paso Natural Gas Company for resale. Annual sales 215.9795 million cubic feet[4]. Supplies Douglas.
1950	Concrete shed, large purifier, and possibly the meter house[1,2].	Arizona Edison Company Inc. natural gas purchased from El Paso Natural Gas Company for resale. Annual sales 584.7239 million cubic feet[4]. Supplies Douglas.
1995	Concrete shed, large purifier, concrete foundations from the two gas holders and generator house, and a 2-foot-deep sump associated with the steel crude oil tank.	Site investigation performed from October 1995 to June 1996. The contents of the oil sump and debris from the purifier were characterized in addition to surface and subsurface soil samples[1].
1996	Oil sump contents and sump; purifier contents and purifier; debris pile; concrete shed; and surface soil. Concrete foundations of two gas holders, two purifiers, meter house, and generator house.	Materials removed from site base on Arcadis/Geraghty & Miller, *Material Removal Activities Former Manufactured Gas Plant, Douglas, Arizona* (June 5, 1998)[3]. Materials remaining onsite[3].
1998	Concrete foundations of the following: two gas holders, two purifiers, a meter house, and a generator house.	Arcadis/Geraghty & Miller, *Material Removal Activities Former Manufactured Gas Plant, Douglas, Arizona* (June 5, 1998)[3].

Notes:

[1] Based on available site investigation report (Geraghty & Miller, *Site Investigation Former Manufactured Gas Plant, Douglas, Arizona*, July 14, 1996).

[2] Based on available Sanborn maps.

[3] Based on available material removal activities (Arcadis/Geraghty & Miller, *Material Removal Activities Former Manufactured Gas Plant, Douglas, Arizona*, June 5, 1998).

[4] Review of *Manufactured Gas Plant Sites in Arizona*, Draft Report for Discussion Purposes Only. Atlantic Environmental Services Inc. May 1992.

Table 1-2. Summary of Historical Analytical Data for Soil – Polynuclear Aromatic Hydrocarbons (PAHs)

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
Residential SRL[3,4]						**NE[6]**	**NE**	**NE**	**3,700**	**22,000**	**6.9**	**0.69**	**6.9**	**NE**	**69**	**680**	**0.69**	**2,300**	**2,700**	**6.9**	**56**	**NE**	**2,300**
Non-Residential SRL[5]						**NE**	**NE**	**NE**	**29,000**	**240,000**	**21**	**2.1**	**21**	**NE**	**210**	**2,000**	**2.1**	**22,000**	**26,000**	**21**	**190**	**NE**	**29,000**
SS-1	SS-1	Discrete	10/26/95	Surface	mg/kg	--	--	1.5	1.7U	1.6	17D	33D	21D	40D	11D	20D	0.75	69D	0.63	25D	1.7	28D	78D
SS-2	SS-2	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.1U7	0.084	1.0D	1.8D	1.5D	2.3D	0.64D	1.1D	0.13	3.9D	0.08	2.1D	0.15	2.4D	4.6D
SS-3	SS-3	Discrete	10/25/95	Surface	mg/kg	--	--	0.17U	0.1U7	0.0083U	0.038	0.071	0.052	0.094	0.044	0.017U	0.034U	0.16	0.017U	0.04	0.083U	0.085	0.15
SS-4	SS-4	Discrete	10/26/95	Surface	mg/kg	--	--	0.42	0.1U7	0.32	2.9D	4.7D	4.6D	9.8D	1.8D	3.4D	0.46	12D	0.41	8.2D	1.1	7.7D	13D
SS-5	SS-5	Discrete	10/26/95	Surface	mg/kg	--	--	32	1.3	17D	160D	230D	170D	99D	93D	150D	8.6D	630D	15D	160D	13	280D	740D
SS-6	SS-6	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.048	3.6D	3.4D	8.8D	8.8D	4.5D	11D	1.0D	27D	0.033	13D	0.095	18D	18D
SS-7	SS-7	Discrete	10/25/95	Surface	mg/kg	--	--	0.19	0.17U	0.36	4.2D	5.6D	5.2D	9.8D	2.3D	5.6D	0.65D	15D	0.18	8.6D	1	9.3D	16D
SS-8	SS-8	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.047	0.14	0.37	0.26	0.46	0.17	0.19	0.034	0.7	0.017U	0.2	0.083U	0.43	0.91D
SS-9	SS-9	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.27	0.62D	0.41	0.94D	0.3	0.37	0.063	1.1D	0.038	0.37	0.11	0.83D	1.3D
SS-10	SS-10	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.70D	1.3D	1.0D	2.0D	0.44D	0.90D	0.16	2.5D	0.034	1.8D	0.32	1.5D	2.8D
SS-11	SS-11	Discrete	10/25/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.049	0.11	0.074	0.12	0.063	0.064	0.034U	0.19	0.017U	0.048	0.083U	0.096	0.2
SS-12	SS-12	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.075	0.045	0.14	0.1	0.025	0.13	0.039	0.1	0.017U	0.026	0.083U	0.038	0.052
SS-13	SS-13	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.087	0.14	0.14	0.17	0.078	0.12	0.034U	0.19	0.017U	0.17	0.083U	0.076	0.065
SS-14	SS-14	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.046	0.38	0.76D	0.61	1.1D	0.28	0.49D	0.083	1.8D	0.024	0.92D	0.086	0.83D	2.0D
SB-1	SB-1 4.5-6	Discrete	10/25/95	4.5-6.0	mg/kg	--	--	0.17U	0.17U	0.0083U	0.072	0.17	0.096	0.21	0.056	0.086	0.034U	0.25	0.017U	0.1	0.083U	0.11	0.31
SB-1	SB-1 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-2	SB-2 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-3	SB-3 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-4	SB-4 0-1.5	Discrete	10/25/95	0-1.5	mg/kg	--	--	0.59	0.17U	0.66	2.1D	4.5D	3.2D	5.4D	1.1D	2.4D	0.24D	13D	0.017U	4.5D	1.1	9.4D	14D
SB-4	SB-4 3-4.5	Discrete	10/25/95	3.0-4.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-4	SB-4 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-5	SB-5 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-6	SB-6 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.047	0.017U	0.017U	0.083U	0.0083U	0.03
SB-6	SB-6 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-7	SB-7 10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-7	SB-7-Dup-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-8	SB-8 9-10	Discrete	10/25/95	9-10.0	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-8	SB-8 20-21.5	Discrete	10/25/95	20.0-21.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-9	SB-9 3-4	Discrete	10/26/95	3.0-4.5	mg/kg	--	--	0.17U	0.17U	0.0093	0.05	0.12	0.079	0.16	0.052	0.066	0.034U	0.17	0.017U	0.093	0.083U	0.058	0.2
SB-9	SB-9 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-9	SB-9 15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-9	SB-9 Dup-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-10	SB-10 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
Debris Pile	Debris A-2	Composite	08/19/96	Surface	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.3	0.7	0.3	0.6	0.2	0.2	0.25U	0.7	0.25U	0.4	1.0U	0.3	0.9
Debris Pile	Debris B-2	Composite	08/19/96	Surface	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.3	0.6	0.3	0.5	0.1	0.2	0.25U	0.7	0.25U	0.4	1.0U	0.2	0.8
Debris Pile	Debris C-2	Composite	08/19/96	Surface	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.3	0.6	0.3	0.7	0.2	0.2	0.25U	0.7	0.25U	0.4	1.0U	0.3	0.7
Debris Pile	Debris D-2	Composite	08/19/96	Surface	mg/kg	0.2U	0.2U	0.5U	0.2U	0.02U	0.03	0.07	0.03	0.08	0.02	0.03	0.05U	0.08	0.05U	0.05	0.2U	0.03	0.09
Debris Pile	Debris E-2	Composite	08/19/96	Surface	mg/kg	0.2U	0.2U	0.5U	0.2U	0.02U	0.05	0.14	0.07	0.21	0.03	0.04	0.05U	0.17	0.05U	0.11	0.2U	0.09	0.19
SS-4/SS-7	SS4-7	Composite	08/21/96	1	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.2	0.4	0.2	0.5	0.1	0.2	0.25U	0.7	0.25U	0.3	1.0U	0.5	0.8
SS-5	SS5 Comp	Composite	08/19/96	1	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.2	0.5	0.2	0.6	0.1	0.2	0.25U	0.7	0.25U	0.3	1.0U	0.3	0.7
SS-6	SS6 PAH Comp	Composite	08/19/96	1	mg/kg	2.0U	2.0U	5.0U	2.0U	0.2	1.3	2.9	1.3	2.6	0.8	1.2	0.5U	4.7	0.5U	1.8	2.0U	2.1	3.8
PUR N	PUR N-B	Composite	08/22/96	1	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.2	0.4	0.2	0.5	0.1	0.2	0.25U	0.7	0.25U	0.2	1.0U	0.2	0.8

Table 1-2. Summary of Historical Analytical Data for Soil – Polynuclear Aromatic Hydrocarbons (PAHs)

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
Residential SRL[3,4]						**NE[6]**	**NE**	**NE**	**3,700**	**22,000**	**6.9**	**0.69**	**6.9**	**NE**	**69**	**680**	**0.69**	**2,300**	**2,700**	**6.9**	**56**	**NE**	**2,300**
Non-Residential SRL[5]						**NE**	**NE**	**NE**	**29,000**	**240,000**	**21**	**2.1**	**21**	**NE**	**210**	**2,000**	**2.1**	**22,000**	**26,000**	**21**	**190**	**NE**	**29,000**
Purifier	SUBPUR B	Composite	08/22/96	1	mg/kg	0.2U	0.2U	0.5U	0.2U	0.02U	0.02U	0.02U	0.05U	0.05U	0.02U	0.02U	0.05U	0.05U	0.05U	0.02U	0.2U	0.02U	0.02U
SS-6 Area - E	SS6WC	Composite	11/4/96	2	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U
SS-6 Area -C	SS6CC	Composite	11/4/96	2	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U
SS-6 Area - E	SS6EC	Composite	11/4/96	2	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U
PUR E	PURE31	Composite	11/5/96	1	mg/kg	--	--	0.1U	0.1U	0.22	0.56	0.64	0.33	1.1	0.48	0.34	0.1U	0.8	0.1U	0.64	0.1U	0.1U	1.1
PUR S	PURS31	Composite	11/5/96	1	mg/kg	--	--	1.2	0.26	9.7	6.9	6.6	4.5	5.9	3.7	3.6	0.48	12	0.93	5.4	0.33	2.08	0.1U
PUR S	PURS32	Composite	11/5/96	1	mg/kg	--	--	0.27	0.1U	0.77	1.1	1.8	0.76	1.8	0.8	0.57	0.17	1.7	0.1U	1.4	0.1U	0.12	2.1
PUR S	PURS41	Composite	11/5/96	2.5	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U
PUR S	PURS42	Composite	11/5/96	2.5	mg/kg	--	--	0.45	0.1U	2.1	1.3	1.5	0.79	1.6	0.91	0.79	0.1U	2.8	0.13	1.0	0.88	0.20	3.4
West Fence	WESTFENCE	Composite	11/5/96	Surface	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U

Notes:

[1] ft bgs = feet below ground surface

[2] mg/kg = milligram(s) per kilogram

[3] Residential SRLs represent the value for 10^{-5} carcinogenic risk for compounds identified as carcinogens in Appendix A of Title 18, Chapter 7.

[4] Cells highlighted in yellow indicate that the compound exceeded the 2007 residential soil remediation level (SRL).

[5] Cells highlighted in **red** indicate the compound exceeded the 2007 non-residential SRL.

[6] NE = Standard not established

[7] -- = Sample not analyzed for this compound

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

D = Sample was diluted for analysis

Table 1-3. Summary of Historical Analytical Data for Soil – TPHs and Fuel Hydrocarbons

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Sample Depth (ft bgs)[1]	Units[2]	TRPH (EPA Method 418.1)[5]	Fuel Hydrocarbons C6-C10	Fuel Hydrocarbons C10-C22	Fuel Hydrocarbons C22-C36
SB-1	SB-1 1.5-3	Discrete	10/25/95	1.5-3.0	mg/kg	780	--	--	--
SB-1	SB-1 4.5-6	Discrete	10/25/95	4.5-6.0	mg/kg	20U	--	--	--
SB-1	SB-1 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20U	--	--	--
SB-1	SB-1 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-2	SB-2 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	20U	--	--	--
SB-3	SB-3 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	20U	--	--	--
SB-4	SB-4 0-1.5	Discrete	10/25/95	0-1.5	mg/kg	4000	--	--	--
SB-4	SB-4 3-4.5	Discrete	10/25/95	3.0-4.5	mg/kg	24	--	--	--
SB-4	SB-4 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20U	--	--	--
SB-4	SB-4 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-5	SB-5 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20U	--	--	--
SB-6	SB-6 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20U	--	--	--
SB-6	SB-6 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-7	SB-7 10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	20U	--	--	--
SB-7Dup	SB-7-Dup-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	20U	--	--	--
SB-7	SB-7 15.0-16	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-8	SB-8 9-10	Discrete	10/25/95	9.0-10.0	mg/kg	26	--	--	--
SB-8	SB-8 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-8	SB-8 20-21.5	Discrete	10/25/95	20.0-21.5	mg/kg	20U	--	--	--
SB-9	SB-9 0-1.5	Discrete	10/25/95	0-1.5	mg/kg	400U	--	--	--
SB-9	SB-9 3-4	Discrete	10/26/95	3.0-4.5	mg/kg	20U	--	--	--
SB-9	SB-9 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	20U	--	--	--
SB-9	SB-9 15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	20U	--	--	--
SB-9Dup	SB-9-Dup-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	20U	--	--	--
SB-10	SB-10 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	20U	--	--	--
Oil Sump[4]	Sludge	Discrete	12/27/95	--	mg/kg	477,000	7300	270000	200000
SS-1 Area[5]	SS-1	Composite	6/1/1996	Surface	mg/kg	40	--	--	--
SS-4/SS-7 Area[5,6]	SS4-7	Composite	6/1/1996	Surface	mg/kg	270	--	--	--
SS-5 Area[5]	SS5	Composite	6/1/1996	Surface	mg/kg	480	--	--	--
SS-6 Area[5]	SS6	Composite	6/1/1996	Surface	mg/kg	780	--	--	--
SS-11/SS-12 Area[5,7]	BACK SS11-12	Composite	6/1/1996	Surface	mg/kg	110	--	--	--
Multiple[5,8]	COMP	Composite	6/1/1996	Surface	mg/kg	260	--	--	--
Debris 1	Debris 1	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 2	Debris 2	Composite	08/19/96	Surface	mg/kg	23	--	--	--
Debris 3	Debris 3	Composite	08/19/96	Surface	mg/kg	50	--	--	--
Debris 3	Debris 3B	Composite	08/20/96		mg/kg	20U	--	--	--
Debris 4	Debris 4	Composite	08/19/96	Surface	mg/kg	590	--	--	--
Debris 4	Debris 4B	Composite	08/20/96	>1	mg/kg	20U	--	--	--
Debris 5	Debris 5	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 6	Debris 6	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 7	Debris 7	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 8	Debris 8	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 9	Debris 9	Composite	08/19/96	Surface	mg/kg	73	--	--	--
Debris 9	Debris 9B	Composite	08/20/96	>1	mg/kg	20U	--	--	--

Table 1-3. Summary of Historical Analytical Data for Soil – TPHs and Fuel Hydrocarbons

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Sample Depth (ft bgs)[1]	Units[2]	TRPH (EPA Method 418.1)[5]	Fuel Hydrocarbons C6-C10	Fuel Hydrocarbons C10-C22	Fuel Hydrocarbons C22-C36
Debris 10	Debris 10	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 11	Debris 11	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 12	Debris 12	Composite	08/19/96	Surface	mg/kg	24	--	--	--
Debris 13	Debris 13	Composite	08/19/96	Surface	mg/kg	27	--	--	--
Debris 14	Debris 14	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 15	Debris 15	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 16	Debris 16	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 17	Debris 17	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 18	Debris 18	Composite	08/19/96	Surface	mg/kg	28	--	--	--
Debris 19	Debris 19	Composite	08/20/96	Surface	mg/kg	60	--	--	--
Debris 19	Debris 19B	Composite	08/20/96	>1	mg/kg	20U	--	--	--
Debris 20	Debris 20	Composite	08/20/96	Surface	mg/kg	20U	--	--	--
SS4-7	SS4-7	Composite	08/21/96	1	mg/kg	20U	--	--	--
SS5	SS5 Comp	Composite	08/19/96	1	mg/kg	20U	--	--	--
SS-6 Area - E	SS6E Comp	Composite	08/19/96	1	mg/kg	39	--	--	--
SS-6 Area - W	SS6W Comp	Composite	08/19/96	1	mg/kg	42	--	--	--
SS-6 Area - C	SS6CENT Comp	Composite	08/19/96	1	mg/kg	53	--	--	--
PUR N	PUR N	Composite	08/20/96	Surface	mg/kg	71	--	--	--
PUR N	PUR N	Composite	08/21/96	1	mg/kg	140	--	--	--
PUR N	PUR E	Composite	08/20/96	Surface	mg/kg	520	--	--	--
PUR N	PUR W	Composite	08/20/96	Surface	mg/kg	150	--	--	--
PUR N	PUR S	Composite	08/20/96	Surface	mg/kg	73	--	--	--
Purifier	Subpurifier	Composite	08/21/96	>1	mg/kg	57	--	--	--

Notes:

[1] ft bgs = feet below ground surface

[2] mg/kg = milligram(s) per kilogram

[3] -- = Sample not analyzed for this compound

[4] Sludge sample was collected for waste disposal purposes. Metals reported in milligrams per liter; benzene, toluene, ethylbenzene, and xylene reported in micrograms per liter

[5] Sampling location indicates area surrounding former October 1995 sampling Location (SS-x) where composite sample was collected.

[6] Composite sample from areas surrounding SS-4 and SS-7

[7] Composite sample from areas surrounding SS-11 and S-S12

[8] Sample COMP is a composite sample of samples collected at the Site on 6/1/1996

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was analyzed for but was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table 1-4. Summary of Historical Analytical Data for Soil – BTEX Compounds

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	Benzene	Ethylbenzene	Toluene	Xylenes, total	m/p-Xylenes	o-Xylenes	Methyl-tert-butyl ether
Residential SRL[3]					**mg/kg**	**0.65**	**400**	**650**	**270**	**270**	**270**	**270**
Non Residential SRL[4]					**mg/kg**	**1.4**	**400**	**650**	**420**	**420**	**420**	**420**
SB-1	SB1-1.5-3	Discrete	10/25/95	1.5-3.0	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-1	SB1-4.5-6	Discrete	10/25/95	4.5-6.0	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-1	SB-1-9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-1	SB1-15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-2	SB2-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-3	SB3-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-4	SB4-0-1.5	Discrete	10/25/95	0-1.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-4	SB-4-3-4.5	Discrete	10/25/95	3.0-4.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-4	SB-4-9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-4	SB4-15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-5	SB5-9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-6	SB6-9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-6	SB6-15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-7	SB7-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-7	SB7-Dup-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-7	SB7-15.0-16	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-8	SB-8-9-10	Discrete	10/25/95	9.0-10.0	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-8	SB8-15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-8	SB8-20-21.5	Discrete	10/25/95	20.0-21.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-0-1.5	Discrete	10/25/95	0-1.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-3-4	Discrete	10/26/95	3.0-4.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-Dup-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-10	SB10-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
Oil Sump[5]	Sludge	Discrete	12/27/95	NA	µg/L	10U	22.5U	22.5U	180	--	--	--
SS-1 Area[6]	SS-1	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
SS-4/SS-7 Area[6,7]	SS4-7	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
SS-5 Area[6]	SS5	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
SS-6 Area[6]	SS6	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
SS-11/SS-12 Area[6,8]	BACK SS11-12	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
Multiple[6,9]	COMP	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U

Notes:

[1] ft bgs = feet below ground surface

[2] mg/kg = milligram(s) per kilogram

[3] Cells highlighted in yellow indicate that the compound exceeded the 2007 residential soil remediation level (SRL).

[4] Cells highlighted in **red** indicate the compound exceeded the 2007 non-residential SRL.

[5] Sludge sample was collected for waste disposal purposes. Benzene, toluene, ethylbenzene, and xylene reported in micrograms per liter. VOCs were analyzed for and not detected in the Sludge sample.

[6] Sampling location indicates area surrounding former October 1995 sampling Location (SS-x) where composite sample was collected.

[7] Composite sample from areas surrounding SS-4 and SS-7

[8] Composite sample from areas surrounding SS-11 and S-S12

[9] Sample COMP is a composite sample of samples collected at the Site on 6/1/1996

-- = Sample not analyzed for this compound

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table 1-5. Summary of Historical Analytical Data for Soil – Metals and Reactive Sulfide

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Cyanide	Reactive Sulfide
Residential SRLs[3]					mg/kg	10	15000	39	120000	400	23	390	390	1200	NA
Non-Residential SRLs[4]					mg/kg	10	170000	510	1000000	800	310	5100	5100	12000	NA
SS-1	SS-1	Discrete	10/26/95	Surface	mg/kg	14.8	71	2	13.1	75.1	0.1U	1.5U	1.0U	0.5U	--
SS-2	SS-2	Discrete	10/26/95	Surface	mg/kg	13.2	268	3	9.2	81	0.1U	1.5U	1.0U	0.5U	--
SS-3	SS-3	Discrete	10/25/95	Surface	mg/kg	17.9	1.7	1.8	25.6	9.6	0.1U	8U	1.0U	1.5	--
SS-4	SS-4	Discrete	10/26/95	Surface	mg/kg	28.8	178	9.3	9.6	388	0.1	3U	1.1	3.3	--
SS-5	SS-5	Discrete	10/26/95	Surface	mg/kg	30.2	123	2.3	7.3	280	0.1	1.5U	1.2	0.5	--
SS-6	SS-6	Discrete	10/26/95	Surface	mg/kg	83.5	68	1.4	96.1	2,530	0.2	13U	1.9	22.8	--
SS-7	SS-7	Discrete	10/25/95	Surface	mg/kg	33.5	82.7	2.4	12.1	2,290	0.2	4U	1.8	14.8	--
SS-8	SS-8	Discrete	10/26/95	Surface	mg/kg	9.7	76.1	1.1	5.3	58.2	0.1U	2U	1.0U	0.5U	--
SS-9	SS-9	Discrete	10/26/95	Surface	mg/kg	11.4	140	4.3	5.4	85.9	0.1U	1.5U	1.0U	0.5U	--
SS-10	SS-10	Discrete	10/26/95	Surface	mg/kg	14.9	142	5.8	6.7	152	0.2	1.0U	1.0U	0.5	--
SS-11	SS-11	Discrete	10/25/95	Surface	mg/kg	16.8	91.9	2.6	6.6	73.5	0.1U	1.0U	1.0U	0.5U	--
SS-12	SS-12	Discrete	10/26/95	Surface	mg/kg	9.5	110	0.8	4.6	52.8	0.1U	1.0U	1.0U	0.5U	--
SS-13	SS-13	Discrete	10/26/95	Surface	mg/kg	10.4	166	2	8.9	70.7	0.1U	1.0U	1.0U	0.5U	--
SS-14	SS-14	Discrete	10/26/95	Surface	mg/kg	8.9	195	1.7	6.3	68.2	0.1U	1.0U	1.0U	0.5U	--
SB-1	SB-1 4.5-6	Discrete	10/25/95	4.5-6.0	mg/kg	34.1	29.8	0.5U	14.9	12.1	0.1U	1.0U	1.0U	0.5U	--
SB-1	SB-1 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20	36.6	0.5U	4.8	10.8	0.1U	1.0U	1.0U	0.5U	--
SB-2	SB-2 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	42.1	8.9	0.5U	14.9	9.5	0.1U	1.0U	1.0U	0.5U	--
SB-3	SB-3 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	19.9	96.2	0.5U	4.2	10.4	0.1U	1.0U	1.0U	0.5U	--
SB-4	SB-4 0-1.5	Discrete	10/25/95	0-1.5	mg/kg	18.3	68.4	1.1	6.1	80.6	0.1U	1.0U	1.0U	0.7	--
SB-4	SB-4 3-4.5	Discrete	10/25/95	3.0-4.5	mg/kg	10	88.8	0.5U	4.6	5.2	0.1U	1.0U	1.0U	0.5U	--
SB-4	SB-4 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	26	30.8	0.5U	7.2	15.5	0.1U	1.0U	1.0U	0.5U	--
SB-5	SB-5 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	15.8	24.6	0.5U	4	7.6	0.1U	1.0U	1.0U	0.8	--
SB-6	SB-6 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	22.6	23	0.5U	3.1	9	0.1U	1.0U	1.0U	22.7	--
SB-6	SB-6 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	19.1	40	0.5U	42	4.5	0.1U	1.0U	1.0U	15.9	--
SB-7	SB-7 10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	18.3	197	0.5U	5.6	11	0.1U	1.0U	1.0U	0.5U	--
SB-7Dup	SB-7-Dup-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	16.3	100	0.5U	12.2	5.3	0.1U	1.0U	1.0U	4	--
SB-8	SB-8 9-10	Discrete	10/25/95	9.0-10.0	mg/kg	27.7	37	0.5U	12	17.4	0.1U	1.0U	1.0U	0.5U	--
SB-8	SB-8 20-21.5	Discrete	10/25/95	20.0-21.5	mg/kg	8.7	26.3	0.5U	33	6.9	0.1U	1.0U	1.0U	10	--
SB-9	SB-9 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	19.9	109	0.5U	9.3	10.1	0.1U	1.0U	1.0U	0.5U	--
SB-9	SB-9 15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	15.1	38	0.5U	4.6	8.9	0.1U	1.0U	1.0U	0.5U	--
SB-9Dup	SB-9-Dup-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	14.2	25.7	0.5U	2.6	7.5	0.1U	1.0U	1.0U	0.5U	--
SB-10	SB10-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	15.3	23.4	0.5U	2.7	6.4	0.1U	1.0U	1.0U	0.5U	--
Oil Sump[6]	Sludge	Discrete	12/27/95	NA	mg/l	1.0UT	0.6T	0.5UT	0.5UT	1.7T	0.1UT	1.0UT	1.0UT	--	--
Purifier	Purifier	Composite	3/20/96	<0.5	% sulfur	--	--	--	--	--	--	--	--	--	12.70
SS-1 Area[7]	SS-1	Composite	6/1/1996	Surface	mg/kg	10U/0.10UT	120	4.4	10	410	0.08U	5.0U	2.5U	--	--
SS-4/SS-7 Area[7,8]	SS4-7	Composite	6/1/1996	Surface	mg/kg	13/0.10UT	110	2.5U	8.1	140	0.08U	5.0U	2.5U	--	--
SS-5 Area[7]	SS5	Composite	6/1/1996	Surface	mg/kg	10U/0.10UT	85	2.5U	9.2	86	0.08U	5.0U	2.5U	--	--
SS-6 Area[7]	SS6	Composite	6/1/1996	Surface	mg/kg	19/0.10UT	100	3.1	20	1,100/0.10UT	0.13	5.0U	2.5U	--	--
SS-11/SS-12 Area[7,9]	BACK SS11-12	Composite	6/1/1996	Surface	mg/kg	10U/0.10UT	98	2.5U	6.7	75	0.08U	5.0U	2.5U	--	--
Multiple[7,10]	COMP	Composite	6/1/1996	Surface	mg/kg	12/0.10UT	92	2.5U	10	250	0.08U	5.0U	2.5U	--	--
Debris A	Debris A	Composite	08/19/96	Surface	mg/kg	18	--	--	--	44	--	--	--	--	--
Debris B	Debris B	Composite	08/19/96	Surface	mg/kg	14	--	--	--	13	--	--	--	--	--
Debris C	Debris C	Composite	08/19/96	Surface	mg/kg	19	--	--	--	100	--	--	--	--	--
Debris D	Debris D	Composite	08/19/96	Surface	mg/kg	17	--	--	--	12	--	--	--	--	--
Debris E	Debris E	Composite	08/20/96	Surface	mg/kg	17	--	--	--	41	--	--	--	--	--
SS-4/SS-7 Area	SS4-7	Composite	08/21/96	>1	mg/kg	15	--	--	--	50	--	--	--	--	--
SS-5 Area7	SS5 Comp	Composite	08/19/96	>1	mg/kg	18	--	--	--	11	--	--	--	--	--

Table 1-5. Summary of Historical Analytical Data for Soil – Metals and Reactive Sulfide

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Cyanide	Reactive Sulfide
Residential SRLs[3]					mg/kg	**10**	**15000**	**39**	**120000**	**400**	**23**	**390**	**390**	**1200**	**NA**
Non-Residential SRLs[4]					mg/kg	**10**	**170000**	**510**	**1000000**	**800**	**310**	**5100**	**5100**	**12000**	**NA**
SS-6 Area - E	SS6E Comp	Composite	08/19/96	>1	mg/kg	18	--	--	--	11	--	--	--	--	--
SS-6 Area - W	SS6W Comp	Composite	08/19/96	>1	mg/kg	24	--	--	--	217	--	--	--	--	--
SS-6 Area - C	SS6CENT Comp	Composite	08/19/96	>1	mg/kg	23	--	--	--	199	--	--	--	--	--
PUR N	PUR N	Composite	08/21/96	Surface	mg/kg	11	--	--	--	91	--	--	--	--	--
Purifier	Subpurifier	Composite	08/21/96	Below Pad	mg/kg	15	--	--	--	15	--	--	--	--	--

Notes:

[1] ft bgs = feet below ground surface

[2] mg/kg = milligram(s) per kilogram

[3] Cells highlighted in yellow indicate that the compound exceeded the 2007 residential soil remediation level (SRL).

[4] Cells highlighted in **red** indicate the compound exceeded the 2007 non-residential SRL.

[5] -- = Sample not analyzed for this compound.

[6] Sludge sample was collected for waste disposal purposes. Metals reported in milligrams per liter.

[7] Sampling location indicates area surrounding former October 1995 sampling Location (SS-x) where composite sample was collected. Results presented as total metals/TCLP metals.

[8] Composite sample from areas surrounding SS-4 and SS-7

[9] Composite sample from areas surrounding SS-11 and S-S12

[10] Sample COMP is a composite sample of samples collected at the Site on 6/1/1996

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation

T = toxicity characteristic leaching procedure (TCLP) used

Table 1-6. Soil Boring Locations and Sample Depths from Previous Investigations

APS Douglas Former MGP Site, Douglas, Arizona

Sample Location	Drilling Method	Sample Date	Sample Location	Sample Depth (ft bgs)	Reference
SB-1	Hollow Stem Auger Boring	10/25/1995	West of generator house	4.5 to 6; 9 to 10.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-2	Hollow Stem Auger Boring	10/26/1995	North of south gas holder near meter house	9 to 10.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-3	Hollow Stem Auger Boring	10/26/1995	Southeast of the north gas holder	9 to 10.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-4	Hollow Stem Auger Boring	10/25/1995	West of the north gas holder near small purifiers	0 to 1.5; 3 to 4.5; 9 to 10.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-5	Hollow Stem Auger Boring	10/25/1995	North of the former generator house	9 to 10.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-6	Hollow Stem Auger Boring	10/25/1995	West of the oil sump	9 to 10.5; 15 to 16.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-7	Hollow Stem Auger Boring	10/25/1995	Between oil sump and large purifier	10 to 11.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-8	Hollow Stem Auger Boring	10/25/1995	South of former generator house	9 to 10; 20 to 21.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-9	Hollow Stem Auger Boring	10/26/1995	Debris and cinder pile	3 to 4; 9 to 10.5; 15 to 16.5	1996 Site Investigation (Geraghty & Miller, 1997)
SB-10	Hollow Stem Auger Boring	10/26/1995	West of debris pile	9 to 10.5	1996 Site Investigation (Geraghty & Miller, 1997)

Notes:

ft bgs = feet below ground surface

Table 2-1. Soil Boring Locations During Pre-design Testing Investigation
APS Douglas Former MGP Site, Douglas, Arizona

Location ID	Drilling Method	Total Depth of Boring (feet below ground surface)	Sample Location	Lab Analyses	Purpose
B-11	Hollow Stem Auger Boring	20	Gas Holder	PAHs, Metals, VOCs	Evaluate vertical extent of contamination under a former gas holder
B-12	Hollow Stem Auger Boring	25	Gas Holder	PAHs, Metals, VOCs	Evaluate vertical extent of contamination under a former gas holder
B-13	Hollow Stem Auger Boring	20	Meter House	PAHs, Metals, VOCs	Evaluate vertical extent of contamination under former meter house
B-14	Hollow Stem Auger Boring	20	Generator House	PAHs, Metals, VOCs	Evaluate vertical extent of contamination under east end of former generator house
B-15	Hollow Stem Auger Boring	15	Generator House	PAHs, Metals, VOCs	Evaluate vertical extent of contamination under north end of former generator house
B-16	Hollow Stem Auger Boring	20	Oil Sump	PAHs, Metals, VOCs	Evaluate vertical extent of contamination under former oil sump
B-17	Hollow Stem Auger Boring	20	Purifiers and PURS32/PURS42 location	PAHs, Metals, VOCs	Evaluate vertical extent of contamination west of former purifiers
B-18	Hollow Stem Auger Boring	15.5	Off Site	PAHs, Metals	Evaluate vertical and horizontal extent of contamination northeast of the Site[1]
B-19	Hollow Stem Auger Boring	20	Debris Pile	PAHs, Metals, VOCs	Evaluate the vertical extent of contamination at the former debris pile
B-20	Hollow Stem Auger Boring	20	North of Debris Pile	PAHs, Metals	Evaluate the vertical and horizonatl extent of contamination north of the former debris pile
B-21	Hollow Stem Auger Boring	25	North of Previous Investigation SS-5 Location	PAHs, Metals, VOCs	Evaluate lateral and vertical extent of contamination north of SS-5 location
B-22	Hollow Stem Auger Boring	15.5	South of Previous Investigation SS-10 Location	PAHs, Metals	Evaluate lateral and vertical extent of contamination south of SS-10 location
B-23	Hollow Stem Auger Boring	20	North of Gas Holders east of SS-14 location	PAHs, Metals	Evaluate vertical and lateral extent of contamination north of the former gas holders
B-24	Hollow Stem Auger Boring	20	Purifiers	PAHs, Metals	Evaluate vertical and horizontal extent of contamination east of former purifiers
B-25*	Sonic Core Barrel Boring	50	Southwest of Debris Pile	PAHs, Metals, VOCs	Evaluate the lateral extent of contamination and groundwater near the western site extent[2]
B-26*	Sonic Core Barrel Boring	50	South of the Gas Holders	PAHs, Metals	Evaluate the lateral extent of contamination and groundwater near the southern site extent
B-27*	Sonic Core Barrel Boring	50	Off Site Southwest of Site	PAHs, Metals	Evaluate background metals and groundwater southwest of the Site
B-28	Hollow Stem Auger Boring	20	Off Site Southwest of Site	PAHs, Metals, VOCs	Evaluate background metals southwest of the Site
B-29	Hollow Stem Auger Boring	21	Off Site South of Site	PAHs, Metals, VOCs	Evaluate the lateral extent of contamination and background metals south of the Site
B-30	Hollow Stem Auger Boring	20	Off Site Northeast of Site	PAHs, Metals, VOCs	Evaluate background metals northeast of the Site
B-31	Hollow Stem Auger Boring	21	Off Site North of Site	PAHs, Metals	Evaluate background metals north of the Site
B-32	Hollow Stem Auger Boring	21	Off Site North of Site	PAHs, Metals	Evaluate background metals north of the Site
B-33	Hollow Stem Auger Boring	21	Off Site North of Site	PAHs, Metals	Evaluate background metals north of the Site
B-34	Hollow Stem Auger Boring	21	Off Site Northwest of Site	PAHs, Metals	Evaluate background metals northwest of the Site
B-35	Hollow Stem Auger Boring	21	Off Site West of Site	PAHs, Metals, VOCs	Evaluate background metals west of the Site[3]

Notes:

[1] This location was moved in the field due to overhead power lines.

[2] This location was moved in the field off private property onto City of Douglas property.

[3] This location was moved in the field to prevent drilling in the wash.

* Borings B-25, B-26, and B-27 also included water analyses for PAHs, metals, and VOCs

Lab Anaylses listed in this table do not include waste characterization.

Table 2-2. Summary of Geotechnical Results

APS Douglas Former MGP Site, Douglas, Arizona

Boring	Sample Depth (ft bgs)	Dry Density (pcf)	Moisture Content (%)	Specific Gravity	Percent Passing No. 200 (%)	Atterberg Limits			Undrained Shear Strength		USCS Classification	FOC (D2974)
						Plastic Limit	Liquid Limit	Plasticity Index	Phi (degrees)	Cohesion (psi)		
B11	5-5.5	-	10.2	-	55	15	39	24			CL	-
	10-10.5	99.6	6.5	-	34	15	31	16	T=18.2, E=35.9	0	SC	-
B12	7.5-8	95.0	10.3	-	-	-	-	-			-	-
	15-15.5	98.6	9.6	-	22	24	55	31			SC	-
B13	2.5-3	-	8.4	-	41	-	-	-			-	-
B14	5-5.5	91.1	8.5	-	34	24	58	34			SC	-
	10-10.5	65.4	10.5	-	67	19	42	23			CL	-
B15	7.5-8	101.6	5.1	-	26	17	31	14			SC	-
B19	2.5-3	-	8.8	-	40	17	50	33			SC	-
	7.5-8	96.6	11.1	-	67	19	57	38			CH	-
B21	5-5.5	98.7	9.1	-	37	17	36	19			SC	-
	19.5-20	94.8	8.3	-	41	16	37	21			SC	-
B22	2.5-3	-	7.0	-	51	17	38	21			CL	-
	5-5.5	-	7.4	-	71	16	43	27			CL	-
	10-10.5	-	5.8	-	28	16	32	16			SC	-
B24	5-5.5	92.3	13.6	-	43	18	44	26			SC	-
	19.5-20	99.9	13.0	-	22	NP	NV	NP			SM	-
B25	5-5.5	77.2	8.2	-	40	21	46	25			SC	-
	7.5-8	-	-	2.622	41	15	24	9			SC	2.5
	10-10.5	108.1	6.0	2.654	34	-	-	-			-	1.3
	20-20.5	104.3	7.2	2.637	25	22	37	15			SC	1.2
	30-30.5	-	-	2.624	-	-	-	-			-	5.8
	40-40.5	80.9	39.1	-	68	-	-	-			-	-
B26	5-5.5	88.2	8.1	2.641	37	-	-	-			-	1.5
	7.5-8	-	-	2.686	-	-	-	-			-	1.7
	10-10.5	-	-	2.600	-	-	-	-			-	1.0
	15-15.5	97.1	6.1	-	14	20	34	14			SC	-
	20-20.5	103.6	5.8	2.684	8.5	-	-	-			-	3.6
	30-30.5	88.2	23.2	2.636	75	22	87	65			CH	1.6
B27	7.5-8	106.2	13.6	-	55	17	47	30			CL	-
	10-10.5	-	-	2.646	-	-	-	-			-	1.5
	15-15.5	102.2	12.9	-	73	17	42	25			CL	-
	20-20.5	-	-	2.641	-	-	-	-			-	0.8
	30-30.5	-	-	-	-	-	-	-			-	0.5
B28	5-5.5	-	7.5	-	30	16	37	21			SC	-
B29	5-5.5	-	4.7	-	42	14	25	11			SC	-
	10-10.5	-	9.1	-	56	15	41	26			CL	-
	15-15.5	-	10.5	-	60	17	39	22			CL	-
B30	10-10.5	-	12.1	-	32	21	46	25			SC	-
	15-15.5	-	11.0	-	26	19	45	26			SC	-
	19.5-20	-	12.4	-	23	20	39	19			SC	-
B31	5-5.5	-	11.5	-	52	19	41	22			CL	-
B32	5-5.5	-	19.7	-	68	20	44	24			CL	-
B33	5-5.5	-	21.4	-	79	21	45	24			CL	-
B34	5-5.5	-	13.5	-	50	16	30	14			CL	-
	10-10.5	-	8.4	-	17	14	30	16			SC	-
	15-15.5	-	8.2	-	27	14	27	13			SC	-
B35	5-5.5	-	10.3	-	42	17	45	28			SC	-
	10-10.5	-	10.1	-	57	17	40	23			CL	-
	20-20.5	-	13.6	-	34	17	39	22			SC	-

Notes:

USCS Classification Codes

foc = fraction of organic carbon; analyzed by Xenco Laboratories

CL = lean, sandy, or silty clays

SC = sandy clays

SM = sandy silt

- = test not analyzed

For Shear Strength: T= Total, E= Effective

ft bgs = feet below ground surface

pcf = pounds per cubic foot

Table 2-3. Summary of Analytical Data for Soil PAHs
APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
Residential Soil Remediation Level				MG/KG	3700	NE	22000	6.9	0.69	6.9	NE	69	680	0.69	2300	2700	6.9	56	NE	2300
Non-Residential Soil Remediation Level				MG/KG	29000	NE	240000	21	2.1	21	NE	210	2000	2.1	22000	26000	21	190	NE	29000
Groundwater Protection Level				MG/KG	90300	29100	7.96E+08	4.85E+25	6.58E+84	2.44E+84	NE	9.87E+82	8.46E+58	1.23E+251	6.67E+12	2.82E+06	NE	113	NE	6.93E+19
B11	D-B11-1.0-1.5	1.0-1.5	30-Oct-19	MG/KG	0.00833 U	0.212	0.0609	0.232	0.39	0.575	0.39	0.168	0.37	0.00833 U	0.759	0.0223	0.317	0.0833 U	0.497	0.759
B11	D-B11-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.0266	1.14	0.275	1.1	1.66	2.9	1.59	0.729	1.79	0.0167 U	3.32	0.127	1.37	0.421	2.41	3.2
B11	D-B11-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.0167 U	0.189	0.0337	0.132	0.215	0.388	0.303	0.0912	0.23	0.0167 U	0.435	0.0167 U	0.234	0.167 U	0.261	0.436
B11	D-B11-7.5-8.0	7.5-8.0	30-Oct-19	MG/KG	0.00834 U	0.202	0.0472	0.175	0.28	0.465	0.309	0.103	0.302	0.00834 U	0.625	0.0232	0.252	0.0834 U	0.446	0.606
B11	D-B11-10.0-10.5	10.0-10.5	30-Oct-19	MG/KG	0.00832 U	0.104	0.027	0.105	0.161	0.258	0.174	0.0642	0.167	0.00832 U	0.347	0.0135	0.142	0.0832 U	0.242	0.344
B11	D-B11-15.0-15.5	15.0-15.5	30-Oct-19	MG/KG	0.00166 U	0.0106	0.00256	0.0082	0.0126	0.0192	0.0129	0.00639	0.012	0.00166 U	0.0273	0.00166 U	0.0105	0.0166 U	0.0217	0.0284
B11	D-B11-19.5-20.0	19.5-20.0	30-Oct-19	MG/KG	0.00167 U	0.0104	0.00327	0.00982	0.0154	0.0205	0.0141	0.00677	0.0134	0.00167 U	0.0343	0.00231	0.0114	0.0167 U	0.0288	0.0378
B12	D-B12-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.0666 U	0.471	0.246	0.811	1.68	1.75	2.12	0.52	1.04	0.0666 U	3.68	0.0716	1.44	0.666 U	2.37	4.4
B12	D-B12-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.00166 U	0.0049	0.0022	0.00481	0.00724	0.00736	0.00718	0.00198	0.00503	0.00166 U	0.0181	0.00212	0.00503	0.0166 U	0.0194	0.0216
B12	D-B12-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	0.0553 J	0.847 J	0.427 J	1.24 J	2.65 J	2.58 J	3.17 J	0.777 J	1.61 J	0.0334 U	5.61 J	0.134 J	2.16 J	0.775 J	3.83 J	6.53 J
B12	D-FD02-103119	5.0-5.5	31-Oct-19	MG/KG	0.0166 UJ	0.107 J	0.047 J	0.175 J	0.386 J	0.418 J	0.468 J	0.0903 J	0.228 J	0.0166 U	0.633 J	0.0166 UJ	0.317 J	0.166 UJ	0.367 J	0.777 J
B12	D-B12-7.5-8.0	7.5-8.0	31-Oct-19	MG/KG	0.669 U	1.84 J	0.826 J	2.79 J	5.93 J	6.16 J	7.41 J	2.26 J	3.59 J	0.669 U	11.5 J	0.669 U	5.01 J	6.69 U	7.2 J	14.2 J
B12	D-B12-10.0-10.5	10.0-10.5	31-Oct-19	MG/KG	0.0167 U	0.0512	0.0258	0.0968	0.18	0.193	0.216	0.0597	0.12	0.0167 U	0.368	0.0167 U	0.149	0.167 U	0.277	0.45
B12	D-B12-15.0-15.5	15.0-15.5	31-Oct-19	MG/KG	0.0167 U	0.0552	0.0225	0.091	0.148	0.172	0.175	0.0507	0.111	0.0167 U	0.338	0.0167 U	0.123	0.167 U	0.285	0.4
B12	D-B12-19.5-20	19.5-20.0	31-Oct-19	MG/KG	0.0333 U	0.398	0.177	0.693	1.38	1.49	1.68	0.453	0.899	0.165	2.68	0.0597	1.16	0.333 U	1.73	3.18
B12	D-B12-24.5-25.0	24.5-25.0	31-Oct-19	MG/KG	0.00187	0.0199	0.00743	0.0318	0.0675	0.0709	0.0806	0.0187	0.0416	0.00167 U	0.119	0.00213	0.0541	0.0167 U	0.0593	0.15
B13	D-B13-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.544 J	14.2 J	6.63 J	17.5 J	28.9 J	26.4 J	30.3 J	7.09 J	20.7 J	0.0667 U	71 J	4.49 J	21.5 J	35.9 J	70.8 J	83.6 J
B13	D-B13-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.955	10.9	4.88	7.25	9.99	10	8.37	2.73	7.71	0.333 U	28.3	5.82	6.18	21	40.1	33.8
B13	D-B13-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	0.116	1.89	0.927	2.13	3.21	3.49	2.58	1.05	2.69	0.0666 U	7.83	0.669	2.04	2.6	8.36	8.76
B13	D-B13-7.5-8.0	7.5-8.0	31-Oct-19	MG/KG	0.58	9.61	4.41	7.72	11.1	10.3	11	3.68	8.48	1.26	33.8	4.75	7.63	25.1	41.3	39.3
B13	D-B13-10.0-10.5	10.0-10.5	31-Oct-19	MG/KG	0.0786	1.74	0.706	1.57	2.44	2.39	2.47	0.825	1.86	0.0334 U	5.87	0.643	1.78	3.23	6.56	7.21
B13	D-B13-15.0-15.5	15.0-15.5	31-Oct-19	MG/KG	0.00366	0.0655	0.0267 J	0.055 J	0.0817 J	0.0832 J	0.0836 J	0.0268 J	0.0607 J	0.00962 J	0.206 J	0.0284 J	0.0589 J	0.116	0.246 J	0.243 J
B13	D-FD01-103119	15.0-15.5	31-Oct-19	MG/KG	0.00607	0.106	0.0495 J	0.124 J	0.184 J	0.196 J	0.173 J	0.0654 J	0.161 J	0.025 J	0.491 J	0.0474 J	0.131 J	0.168	0.529 J	0.524 J
B13	D-B13-19.5-20.0	19.5-20.0	31-Oct-19	MG/KG	0.00265	0.0343	0.0189	0.0355	0.0488	0.0504	0.0455	0.0149	0.038	0.00166 U	0.128	0.019	0.0329	0.0518	0.159	0.152
B14	D-B14-1.0-1.5	1.0-1.5	29-Oct-19	MG/KG	0.00167 U	0.00704	0.0102	0.017	0.0157	0.044	0.00841	0.0109	0.0228	0.00167 U	0.0393	0.00167 U	0.0081	0.0167 U	0.00637	0.0451
B14	D-B14-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	0.00832 U	0.00943	0.00853	0.0144	0.0165	0.0212	0.143	0.00832 U	0.0129	0.00832 U	0.0318	0.00832 U	0.0209	0.0832 U	0.0201	0.0343
B14	D-B14-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.00167 U	0.00422	0.00234	0.00726	0.0162	0.0181	0.045	0.00539	0.00966	0.00167 U	0.0213	0.00167 U	0.0191	0.0167 U	0.0131	0.0293
B14	D-B14-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	0.00833 U	0.0694	0.0886	0.274	0.301	0.382	0.344	0.128	0.269	0.00833 U	0.639	0.00833 U	0.219	0.0833 U	0.37	0.584
B14	D-B14-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.00167 U	0.102	0.0437	0.131	0.159	0.223	0.157	0.0745	0.138	0.00167 U	0.292	0.00366	0.0959	0.0167 U	0.148	0.293
B14	D-B14-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.00166 U	0.0475	0.00412	0.0104	0.0123	0.0181	0.0135	0.0048	0.0101	0.00166 U	0.026	0.00166 U	0.0074	0.0166 U	0.016	0.0237
B14	D-B14-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	0.00166 U	0.0137	0.00306	0.00723	0.0107	0.0146	0.0184	0.00468	0.00799	0.00166 U	0.019	0.00166 U	0.00855	0.0166 U	0.0114	0.0218
B15	D-B15-1.0-1.5	1.0-1.5	01-Nov-19	MG/KG	0.00833 U	0.00833 U	0.00833 U	0.00833 U	0.0115	0.0168	0.0193	0.00833 U	0.0141	0.00833 U	0.0147	0.00833 U	0.0102	0.0833 U	0.0118	0.017
B15	D-B15-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.00833 U	0.00936 J	0.00878 J	0.0242 J	0.0329 J	0.0454 J	0.0228 J	0.00917 J	0.0341 J	0.00833 U	0.0644 J	0.00833 U	0.0149 J	0.0833 U	0.0504 J	0.0776 J
B15	D-B15-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.0333 U	0.051	0.0341	0.131	0.201	0.227	0.149	0.0709	0.151	0.0333 U	0.42	0.0333 U	0.116	0.333 U	0.298	0.533
B15	D-FD03-110119	5.0-5.5	01-Nov-19	MG/KG	0.0333 U	0.128	0.0837	0.286	0.467	0.519	0.365	0.163	0.339	0.0333 U	0.93	0.0333 U	0.28	0.333 U	0.701	1.17
B15	D-B15-7.5-8.0	7.5-8.0	01-Nov-19	MG/KG	0.0334 U	0.327	0.221	0.658	1.07	1.27	0.778	0.324	0.777	0.0334 U	2.04	0.0844	0.611	0.334 U	1.54	2.57
B15	D-B15-10.0-10.5	10.0-10.5	01-Nov-19	MG/KG	0.0167 U	0.0489	0.03	0.0935	0.144	0.162	0.108	0.0546	0.106	0.0167 U	0.319	0.0167 U	0.0862	0.167 U	0.269	0.39
B15	D-FD04-110119	10.0-10.5	01-Nov-19	MG/KG	0.0333 U	0.132	0.0786	0.275	0.487	0.588	0.391	0.148	0.358	0.0333 U	1.12	0.0375	0.301	0.333 U	0.972	1.41
B15	D-B15-14.5-15.0	14.5-15.0	01-Nov-19	MG/KG	0.00198	0.0326	0.0242	0.0731	0.112	0.125	0.0892	0.0398	0.0856	0.00166 U	0.217	0.0105	0.0688	0.021	0.174	0.255
B16	D-B16-0-102719	0-0	27-Oct-19	MG/KG	0.00333 U	0.011	0.0147	0.0245	0.0376	0.0742	0.0242	0.0169	0.0341	0.00333 U	0.0572	0.00333 U	0.0188	0.0333 U	0.0287	0.0642
B16	D-B16-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	0.0167 U	0.112	0.0737	0.238	0.433	0.486	0.377	0.146	0.326	0.00167 U	0.743	0.0249 J	0.263	0.167 UJ	0.526	0.917
B16	D-FD01-102919	5.0-5.5	29-Oct-19	MG/KG	0.00833 U	0.184	0.121	0.338	0.641	0.766	0.468	0.178	0.434	0.00833 U	1.04	0.0441 J	0.329	0.136 J	0.745	1.27
B16	D-B16-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.00334 U	0.049	0.0309	0.092	0.174	0.202	0.123	0.0625	0.112	0.00334 U	0.276	0.00932	0.0892	0.0357	0.177	0.338
B16	D-B16-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	0.0167 U	0.39	0.257	0.83	1.31	1.41	1.39	0.363	0.975	0.171	2.54	0.102	0.944	0.321	1.67	3.16
B16	D-B16-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.00831 U	0.0573	0.0388	0.103	0.169	0.184	0.189	0.0487	0.116	0.00831 U	0.344	0.019	0.126	0.0831 U	0.303	0.418
B16	D-B16-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.00167 U	0.0368 J	0.0245 J	0.0722 J	0.13 J	0.136 J	0.113 J	0.0417	0.0877 J	0.00167 U	0.221 J	0.00932 J	0.0802 J	0.0279 J	0.152 J	0.281 J
B16	D-FD02-102919	15.0-15.5	29-Oct-19	MG/KG	0.00167 U	0.0175 J	0.013 J	0.0406 J	0.0676 J	0.0674 J	0.056 J	0.0269	0.046 J	0.00167 U	0.127 J	0.00482 J	0.0401 J	0.0167 UJ	0.0837 J	0.155 J
B16	D-B16-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	0.00166 U	0.0241	0.0168	0.0505	0.0851	0.1	0.0731	0.0245	0.0589	0.00166 U	0.157	0.00625	0.0509	0.0188	0.113	0.191
B17	D-B17-0-102719	0-0	27-Oct-19	MG/KG	0.00834 U	0.0166	0.0217	0.0583	0.0835	0.135	0.05	0.0474	0.0819	0.00834 U	0.162	0.00834 U	0.0362	0.0834 U	0.105	0.181
B17	D-B17-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.0413	0.808	0.61	2.71	5.31	4.89	6.71	1.37	3.29	0.0167 U	8.61	0.21	4.31	0.405	4.56	10.6
B17	D-B17-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.0668 U	0.414	0.0833	0.295	0.544	0.576	0.636	0.177	0.351	0.0668 U	1.09	0.0668 U	0.451	0.668 U	0.808	1.32
B17	D-B17-7.5-8.0	7.5-8.0	30-Oct-19	MG/KG	0.027	0.689	0.316	1.27	2.33	2.37	1.84	0.799	1.6	0.21	4.63	0.159	1.35	0.967	3.16	5.8
B17	D-B17-10.0-10.5	10.0-10.5	30-Oct-19	MG/KG	0.00836 U	0.204	0.0934	0.409	0.747	0.714	0.964	0.246	0.503	0.00836 U	1.48	0.0533	0.633	0.294	1.1	1.77
B17	D-B17-15.0-15.5	15.0-15.5	30-Oct-19	MG/KG	0.00167 U	0.00837	0.00471	0.0191	0.0318	0.033	0.0285	0.0109	0.022	0.00167 U	0.0671	0.00211	0.0209	0.0167 U	0.0485	0.0815
B17	D-B17-19.5-20.0	19.5-20.0	30-Oct-19	MG/KG	0.00167 U	0.00175	0.00167 U	0.00405	0.00705	0.00759	0.00731	0.00238	0.00454	0.00167 U	0.013	0.00167 U	0.00508	0.0167 U	0.00783	0.0161
B18	D-B18-0-102719	0-0	27-Oct-19	MG/KG	0.00834 U	0.00834 U	0.0096	0.0425	0.0583	0.0912	0.0386	0.0261	0.0591	0.00834 U	0.112	0.00834 U	0.0326	0.0834 U	0.057	0.1
B18	D-B18-2.0-2.5	2.5-3.0	28-Oct-19	MG/KG	0.00334 U	0.00979	0.00752	0.0276	0.0474	0.0698	0.0267	0.019	0.0356	0.00334 U	0.0757	0.00334 U	0.0218	0.0334 U	0.0394	0.105
B18	D-B18-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.00333 U	0.0179 J	0.0165 J	0.0643 J	0.115 J	0.179 J	0.0661 J	0.0389 J	0.0865 J	0.00333 U	0.181 J	0.00333 U	0.0541 J	0.0333 U	0.0744 J	0.25 J
B18	D-FD03-102819	5.0-5.5	28-Oct-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00597 J	0.0106 J	0.0149 J	0.00603 J	0.00427 J	0.00728 J	0.00166 U	0.0151 J	0.00166 U	0.00495 J	0.0166 U	0.00538 J	0.0224 J
B18	D-B18-7.0-7.5	7.0-7.5	28-Oct-19	MG/KG	0.00167 U	0.00688	0.00478	0.0195	0.0353	0.0528	0.021	0.0151	0.025	0.00167 U	0.0595	0.00167 U	0.0169	0.0167 U	0.026	0.0872
B18	D-B18-10.0-10.5	10.0-10.5	05-Nov-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B18	D-B18-15.0-15.5	15.0-15.5	05-Nov-19	MG/KG	0.00166 U	0.00422	0.00382	0.0139	0.0247	0.0324	0.0211	0.0106	0.0188	0.00166 U	0.0418	0.00166 U	0.0163	0.0166 U	0.0221	0.0508
B19	D-B19-0-102719	0-0	27-Oct-19	MG/KG	0.00334 U	0.0047	0.00577	0.0204	0.0322	0.0594	0.02	0.0159	0.032	0.00334 U	0.06	0.00334 U	0.0176	0.0334 U	0.0269	0.0598
B19	D-B19-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.00166 U	0.00681	0.00472	0.0224	0.045	0.0611	0.0377	0.0185	0.0319	0.00166 U	0.0556	0.00166 U	0.0284	0.0166 U	0.0195	0.0644

Table 2-3. Summary of Analytical Data for Soil PAHs
APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
Residential Soil Remediation Level				MG/KG	**3700**	**NE**	**22000**	**6.9**	**0.69**	**6.9**	**NE**	**69**	**680**	**0.69**	**2300**	**2700**	**6.9**	**56**	**NE**	**2300**
Non-Residential Soil Remediation Level				MG/KG	**29000**	**NE**	**240000**	**21**	**2.1**	**21**	**NE**	**210**	**2000**	**2.1**	**22000**	**26000**	**21**	**190**	**NE**	**29000**
Groundwater Protection Level				MG/KG	**90300**	**29100**	**7.96E+08**	**4.85E+25**	**6.58E+84**	**2.44E+84**	**NE**	**9.87E+82**	**8.46E+58**	**1.23E+251**	**6.67E+12**	**2.82E+06**	**NE**	**113**	**NE**	**6.93E+19**
B19	D-B19-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00263**	**0.00269**	**0.00365**	**0.00175**	0.00167 U	**0.00286**	0.00167 U	**0.00517**	0.00167 U	0.00167 U	0.0167 U	**0.00287**	**0.00536**
B19	D-B19-7.5-8.0	7.5-8.0	01-Nov-19	MG/KG	0.00166 U	**0.00822**	**0.00564**	**0.0227**	**0.042**	**0.0504**	**0.0375**	**0.0148**	**0.0284**	0.00166 U	**0.0694**	0.00166 U	**0.0277**	0.0166 U	**0.0369**	**0.0825**
B19	D-B19-10.0-10.5	10.0-10.5	02-Nov-19	MG/KG	0.00167 U	**0.0208**	**0.0149**	**0.0583**	**0.108**	**0.126**	**0.0928**	**0.032**	**0.072**	0.00167 U	**0.184**	**0.00526**	**0.0684**	0.0167 U	**0.107**	**0.226**
B19	D-B19-15.0-15.5	15.0-15.5	02-Nov-19	MG/KG	**0.00303**	**0.0549**	**0.0236**	**0.0643**	**0.0937**	**0.11**	**0.0719**	**0.0322**	**0.0725**	0.00167 U	**0.213**	**0.0247**	**0.0547**	0.0167 U	**0.253**	**0.257**
B19	D-B19-19.5-20.0	19.5-20.0	02-Nov-19	MG/KG	0.00167 U	**0.0243**	**0.0151**	**0.055**	**0.0947**	**0.104**	**0.0802**	**0.0357**	**0.0666**	0.00167 U	**0.178**	**0.00782**	**0.0594**	0.0167 U	**0.131**	**0.225**
B20	D-B20-0-102719	0-0	27-Oct-19	MG/KG	0.00167 U	**0.0391**	**0.0281**	**0.129**	**0.23**	**0.286**	**0.19**	**0.0737**	**0.17**	0.00167 U	**0.419**	**0.00455**	**0.146**	**0.0238 J**	**0.17**	**0.516**
B20	D-FD01-102719	0-0	27-Oct-19	MG/KG	0.00166 U	**0.0484**	**0.0397**	**0.176**	**0.309**	**0.4**	**0.229**	**0.105**	**0.233**	0.00166 U	**0.539**	**0.00524**	**0.181**	0.0166 UJ	**0.183**	**0.681**
B20	D-B20-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.0167 U	0.0167 U	0.0167 U	**0.0502 J**	**0.0716 J**	**0.0991 J**	**0.0538 J**	**0.0371**	**0.0711 J**	0.0167 U	**0.119 J**	0.0167 U	**0.0454 J**	0.167 U	**0.0505 J**	**0.111 J**
B20	D-B20-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.00833 U	**0.142**	**0.0822**	**0.66**	**1.34**	**1.34**	**1.57**	**0.398**	**0.833**	**0.175**	**1.62**	**0.0148**	**1.08**	0.0833 U	**0.559**	**2.2**
B20	D-B20-7.5-8.0	7.5-8.0	02-Nov-19	MG/KG	0.00167 U	**0.0043**	**0.00636**	**0.0261**	**0.0401**	**0.076**	**0.0245**	**0.0181**	**0.037**	**0.00541**	**0.0599**	0.00167 U	**0.0218**	0.0167 U	**0.019**	**0.0552**
B20	D-B20-9.5-10.0	9.5-10.0	02-Nov-19	MG/KG	0.00167 U	**0.00419**	**0.00441**	**0.0151**	**0.0227**	**0.0347**	**0.0171**	**0.0107**	**0.0203**	0.00167 U	**0.039**	0.00167 U	**0.0142**	0.0167 U	**0.0243**	**0.0413**
B20	D-B20-14.5-15.0	14.5-15.0	02-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00539**	**0.00886**	**0.0144**	**0.0066**	**0.00348**	**0.00747**	0.00167 U	**0.0136**	0.00167 U	**0.00549**	0.0167 U	**0.0047**	**0.0141**
B20	D-B20-19.5-20.0	19.5-20.0	02-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00227**	**0.00367**	**0.00577**	**0.00299**	0.00167 U	**0.00286**	0.00167 U	**0.00609**	0.00167 U	**0.00233**	0.0167 U	**0.00245**	**0.00665**
B21	D-B21-0-102719	0-0	27-Oct-19	MG/KG	0.00832 U	0.00832 U	0.00832 U	0.00832 U	0.00832 U	**0.0135**	0.00832 U	0.00832 U	0.00832 U	0.00832 U	**0.0126**	0.00832 U	0.00832 U	0.0832 U	**0.0104**	**0.0112**
B21	D-B21-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	**0.0521**	**1.89**	**1.38**	**6.24**	**11.8**	**12.3**	**9.7**	**3.69**	**8.25**	0.0334 U	**20.3**	**0.366**	**7.56**	**1.65**	**8.9**	**25.7**
B21	D-FD02-110119	2.5-3.0	01-Nov-19	MG/KG	**0.0796**	**2.37**	**1.27**	**4.91**	**9.38**	**9.84**	**8.54**	**2.44**	**6.3**	0.0333 U	**18.1**	**0.604**	**5.88**	**2.41**	**12.3**	**22**
B21	D-B21-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.0333 U	0.0333 U	0.0333 U	**0.0863**	**0.154**	**0.164**	**0.138**	**0.051**	**0.101**	0.0333 U	**0.226**	0.0333 U	**0.101**	0.333 U	**0.109**	**0.297**
B21	D-B21-7.5-8.0	7.5-8.0	01-Nov-19	MG/KG	0.0332 U	**0.56**	**0.346**	**1.51**	**2.84**	**3.16**	**2.67**	**0.78**	**1.91**	0.0332 U	**4.9**	**0.14**	**1.95**	**0.688**	**3.03**	**6.58**
B21	D-B21-10.0-10.5	10.0-10.5	01-Nov-19	MG/KG	0.0333 U	**0.525**	**0.358**	**1.5**	**2.78**	**3.04**	**2.59**	**0.792**	**1.87**	0.0333 U	**4.62**	**0.138**	**1.88**	**0.361**	**2.71**	**6.25**
B21	D-B21-15.0-15.5	15.0-15.5	01-Nov-19	MG/KG	0.0333 U	**0.538**	**0.347**	**1.52**	**2.73**	**3.04**	**2.6**	**0.698**	**1.89**	0.0333 U	**4.96**	**0.141**	**1.88**	**0.514**	**3.12**	**6.63**
B21	D-B21-19.5-20.0	19.5-20.0	01-Nov-19	MG/KG	0.0167 U	**0.0541**	**0.0325**	**0.156**	**0.301**	**0.327**	**0.295**	**0.0947**	**0.193**	0.0167 U	**0.512**	0.0167 U	**0.213**	0.167 U	**0.267**	**0.703**
B21	D-B21-24.5-25.0	24.5-25.0	01-Nov-19	MG/KG	0.00167 U	**0.00934**	**0.006**	**0.0293**	**0.0544**	**0.0596**	**0.0453**	**0.0209**	**0.0357**	0.00167 U	**0.0957**	**0.00235**	**0.0342**	0.0167 U	**0.0523**	**0.128**
B22	D-B22-0-102719	0-0	27-Oct-19	MG/KG	0.00832 U	**0.0239**	**0.0228**	**0.0688**	**0.101**	**0.154**	**0.0664**	**0.0454**	**0.0859**	0.00832 U	**0.169**	0.00832 U	**0.0522**	0.0832 U	**0.0945**	**0.18**
B22	D-B22-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B22	D-B22-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.0166 U	**0.0325**	**0.0276**	**0.0907**	**0.113**	**0.164**	**0.101**	**0.0368**	**0.106**	0.0166 U	**0.244**	0.0166 U	**0.0811**	0.166 U	**0.162**	**0.252**
B22	D-B22-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	0.00167 U	**0.0103**	**0.00711**	**0.0199**	**0.0248**	**0.0379**	**0.0167**	**0.0122**	**0.0253**	0.00167 U	**0.0625**	0.00167 U	**0.0143**	0.0167 U	**0.0539**	**0.064**
B22	D-B22-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.00835 U	0.00835 U	0.00835 U	**0.0247**	**0.0282**	**0.0419**	**0.0237**	**0.00974**	**0.0288**	0.00835 U	**0.0597**	0.00835 U	**0.0189**	0.0835 U	**0.0395**	**0.0591**
B22	D-B22-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.00166 U	**0.00408**	0.00166 U	**0.00361**	**0.00418**	**0.00699**	**0.00283**	**0.00222**	**0.00456**	0.00166 U	**0.0104**	0.00166 U	**0.00238**	0.0166 U	**0.00921**	**0.0109**
B23	D-B23-0-102719	0-0	27-Oct-19	MG/KG	0.00833 U	**0.046**	**0.0506**	**0.116**	**0.19**	**0.273**	**0.112**	**0.0821**	**0.149**	0.00833 U	**0.386**	**0.0141**	**0.0881**	0.0833 U	**0.27**	**0.438**
B23	D-B23-25-3.0	2.5-3.0	31-Oct-19	MG/KG	0.0334 U	**0.0449**	0.0334 U	**0.117 J**	**0.213**	**0.237**	**0.259**	**0.0722**	**0.143 J**	0.0334 U	**0.423**	0.0334 U	**0.177**	0.334 U	**0.262**	**0.504**
B23	D-FD03-103119	2.5-3.0	31-Oct-19	MG/KG	0.0333 U	**0.0699**	**0.0455**	**0.206 J**	**0.322**	**0.39**	**0.337**	**0.0828**	**0.243 J**	0.0333 U	**0.608**	0.0333 U	**0.244**	0.333 U	**0.323**	**0.724**
B23	D-B23-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	0.00167 U	**0.00264**	0.00167 U	**0.00635 J**	**0.0133 J**	**0.0148 J**	**0.0194 J**	**0.00424**	**0.00828 J**	0.00167 U	**0.0251 J**	0.00167 U	**0.0125 J**	0.0167 U	**0.0149 J**	**0.0293 J**
B23	D-B23-7.5-8.0	7.5-8.0	31-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00222**	**0.00248**	**0.0029**	0.00167 U	0.00167 U	0.00167 U	**0.00377**	0.00167 U	**0.00187**	0.0167 U	**0.00226**	**0.00469**
B23	D-B23-9.5-10.0	9.5-10.0	31-Oct-19	MG/KG	0.00166 U	**0.00183**	0.00166 U	**0.00314**	**0.00579**	**0.00713**	**0.00787**	**0.00175**	**0.00392**	0.00166 U	**0.0101**	0.00166 U	**0.00523**	0.0166 U	**0.00603**	**0.0122**
B23	D-B23-14.5-15.0	14.5-15.0	31-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00296**	**0.00327**	**0.00448**	0.00167 U	**0.00179**	0.00167 U	**0.00499**	0.00167 U	**0.00286**	0.0167 U	**0.0027**	**0.00633**
B23	D-B23-19.5-20.0	19.5-20.0	31-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00292**	**0.00319**	**0.00461**	0.00167 U	**0.00176**	0.00167 U	**0.00495**	0.00167 U	**0.00285**	0.0167 U	**0.00316**	**0.00624**
B24	D-B24-0-102719	0-0	28-Oct-19	MG/KG	0.0138 U	**0.211**	**0.113**	**0.394**	**0.814**	**0.898**	**0.473**	**0.274**	**0.523**	0.00333 U	**1.49**	**0.0332**	**0.369**	**0.14**	**0.891**	**1.78**
B24	D-B24-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.00166 U	**0.0057**	**0.00289**	**0.0102**	**0.0233**	**0.0232**	**0.0306**	**0.00672**	**0.0134**	0.00166 U	**0.0416**	0.00166 U	**0.0178**	0.0166 U	**0.027**	**0.0514**
B24	D-B24-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	**0.00243**	**0.0434**	**0.0211**	**0.063**	**0.15**	**0.147**	**0.163**	**0.0434**	**0.0875**	0.00167 U	**0.278**	**0.00674**	**0.108**	**0.0302**	**0.187**	**0.362**
B24	D-B24-7.5-8.0	7.5-8.0	30-Oct-19	MG/KG	**0.0281**	**0.407**	**0.172**	**0.491**	**1.18**	**1.24**	**1.16**	**0.308**	**0.707**	0.0167 U	**2.3**	**0.0514**	**0.801**	**0.321**	**1.47**	**2.78**
B24	D-B24-10.0-10.5	10.0-10.5	30-Oct-19	MG/KG	0.0334 U	**0.363**	**0.162**	**0.538**	**1.22**	**1.24**	**1.44**	**0.341**	**0.73**	0.0334 U	**2.23**	**0.0503**	**0.958**	0.334 U	**1.38**	**2.75**
B24	D-B24-15.0-15.5	15.0-15.5	30-Oct-19	MG/KG	0.0167 U	**0.196**	**0.149**	**0.386**	**0.877**	**0.858**	**0.746**	**0.247**	**0.521**	0.0167 U	**1.72**	**0.0535**	**0.538**	**0.257**	**1.3**	**2.08**
B24	D-B24-19.5-20.0	19.5-20.0	30-Oct-19	MG/KG	**0.00198 J**	**0.0382 J**	**0.018 J**	**0.0411 J**	**0.0818 J**	**0.0813 J**	**0.104 J**	**0.0239 J**	**0.0506 J**	0.00167 U	**0.181 J**	**0.00825 J**	**0.0649 J**	**0.0215 J**	**0.145 J**	**0.215 J**
B24	D-FD01-103019	19.5-20.0	30-Oct-19	MG/KG	0.00167 U	**0.0103 J**	**0.00347 J**	**0.00975 J**	**0.0232 J**	**0.0237 J**	**0.0322 J**	**0.00611 J**	**0.0131 J**	0.00167 U	**0.0471 J**	0.00167 UJ	**0.0202 J**	0.0167 UJ	**0.0327 J**	**0.0615 J**
B25	D-B25-0-102719	0-0	27-Oct-19	MG/KG	0.00832 U	**0.102**	**0.0934**	**0.372**	**0.626**	**0.84**	**0.449**	**0.223**	**0.469**	0.00832 U	**1.01**	**0.0145**	**0.346**	0.0832 U	**0.493**	**1.23**
B25	D-B25-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00274**	**0.00357**	**0.00531**	**0.00299**	0.00167 U	**0.0032**	0.00167 U	**0.00662**	0.00167 U	**0.0025**	0.0167 U	**0.00288**	**0.00658**
B25	D-B25-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00294**	**0.00501**	**0.0068**	**0.00672**	0.00167 U	**0.00407**	0.00167 U	**0.0119**	0.00167 U	**0.00452**	0.0167 U	**0.00425**	**0.0125**
B25	D-B25-7.5-8.0	7.5-8.0	30-Oct-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	**0.00205**	**0.00301**	**0.00432**	**0.00412**	0.00166 U	**0.00258**	0.00166 U	**0.00518**	0.00166 U	**0.00286**	0.0166 U	**0.00243**	**0.00549**
B25	D-B25-10.0-10.5	10.0-10.5	31-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B25	D-B25-15.0-15.5	15.0-15.5	31-Oct-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B25	D-B25-20.0-20.5	20.0-20.5	31-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00258**	**0.00369**	**0.00466**	**0.00446**	0.00167 U	**0.00303**	0.00167 U	**0.00704**	0.00167 U	**0.00309**	0.0167 U	**0.00568**	**0.00828**
B25	D-B25-25.0-25.5	25.0-25.5	31-Oct-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B25	D-B25-30.0-30.5	30.0-30.5	31-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B25	D-B25-40.0-40.5	40.0-40.5	31-Oct-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B25	D-FD04-103119	40.0-40.5	31-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B26	D-B26-0-102719	0-0	28-Oct-19	MG/KG	0.00803 U	**0.0588**	**0.0124**	**0.036**	**0.0755**	**0.106**	**0.0552**	**0.0289**	**0.0479**	0.00334 U	**0.14**	0.00334 U	**0.0417**	0.0334 U	**0.0679**	**0.201**
B26	D-B26-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00264**	**0.00395**	**0.00455**	**0.00507**	0.00167 U	**0.00307**	0.00167 U	**0.0086**	0.00167 U	**0.0035**	0.0167 U	**0.00604**	**0.0101**
B26	D-FD05-110119	2.5-3.0	01-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	**0.0041**
B26	D-B26-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00177**	**0.00299**	**0.004**	**0.00464**	0.00167 U	**0.00231**	0.00167 U	**0.00726**	0.00167 U	**0.00299**	0.0167 U	**0.00574**	**0.00841**
B26	D-B26-7.5-8.0	7.5-8.0	02-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B26	D-B26-10.0-10.5	10.0-10.5	02-Nov-19	MG/KG	0.00834 U	0.00834 U	0.00834 U	0.00834 U	**0.0107**	**0.0163**	**0.0157**	0.00834 U	**0.00933**	0.00834 U	**0.0194 J**	0.00834 U	**0.0102**	0.0834 U	**0.00888 J**	**0.0238 J**
B26	D-B26-15.0-15.5	15.0-15.5	02-Nov-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B26	D-B26-20.0-20.5	20.0-20.5	02-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00268**	**0.00353**	**0.00376**	0.00167 U	**0.00216**	0.00167 U	**0.00517**	0.00167 U	**0.00252**	0.0167 U	**0.00348**	**0.00657**
B26	D-B26-25.0-25.5	25.0-25.5	02-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U

Table 2-3. Summary of Analytical Data for Soil PAHs
APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
Residential Soil Remediation Level				MG/KG	**3700**	**NE**	**22000**	**6.9**	**0.69**	**6.9**	**NE**	**69**	**680**	**0.69**	**2300**	**2700**	**6.9**	**56**	**NE**	**2300**
Non-Residential Soil Remediation Level				MG/KG	**29000**	**NE**	**240000**	**21**	**2.1**	**21**	**NE**	**210**	**2000**	**2.1**	**22000**	**26000**	**21**	**190**	**NE**	**29000**
Groundwater Protection Level				MG/KG	**90300**	**29100**	**7.96E+08**	**4.85E+25**	**6.58E+84**	**2.44E+84**	**NE**	**9.87E+82**	**8.46E+58**	**1.23E+251**	**6.67E+12**	**2.82E+06**	**NE**	**113**	**NE**	**6.93E+19**
B26	D-B26-30.0-30.5	30.0-30.5	02-Nov-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B26	D-B26-40.0-40.5	40.0-40.5	02-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B27	D-B27-0-102719	0-0	27-Oct-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	**0.0021**	**0.00294**	**0.00232**	0.00166 U	**0.00178**	0.00166 U	**0.00205**	0.00166 U	**0.0018**	0.0166 U	0.00166 U	**0.00275**
B27	D-B27-2.5-3.0	2.5-3.0	03-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B27	D-FD01-110319	2.5-3.0	03-Nov-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B27	D-B27-5.0-5.5	5.0-5.5	03-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B27	D-B27-7.5-8.0	7.5-8.0	03-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00184**	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	**0.00187**
B27	D-B27-10.0-10.5	10.0-10.5	03-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B27	D-B27-15.0-15.5	15.0-15.5	03-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B27	D-B27-20.0-20.5	20.0-20.5	03-Nov-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B27	D-B27-25.0-25.5	25.0-25.5	03-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B27	D-FD02-110319	25.0-25.5	03-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00198**	**0.00204**	**0.00264**	0.00167 U	0.00167 U	0.00167 U	**0.00218**	0.00167 U	**0.00178**	0.0167 U	0.00167 U	**0.0025**
B27	D-B27-30.0-30.5	30.0-30.5	04-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B27	D-FD01-110219	30.0-30.5	02-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B27	D-B27-40.0-40.5	40.0-40.5	04-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B28	D-B28-0-102719	0-0	27-Oct-19	MG/KG	0.0167 U	0.0167 U	**0.0206**	**0.0999**	**0.116**	**0.191**	**0.0595**	**0.051**	**0.12**	0.0167 U	**0.199**	0.0167 U	**0.0564**	0.167 U	**0.0929**	**0.179**
B28	D-B28-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.00167 U	0.00167 U	**0.00206 J**	**0.0104 J**	**0.0177 J**	**0.0291 J**	**0.0201 J**	**0.00705 J**	**0.0148 J**	0.00167 U	**0.0261 J**	0.00167 U	**0.0158 J**	0.0167 U	**0.011 J**	**0.0216**
B28	D-FD03-102919	5.0-5.5	29-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 UJ	**0.00596 J**	**0.00826 J**	**0.0119 J**	**0.00581 J**	**0.00307 J**	**0.00764 J**	0.00167 U	**0.0125 J**	0.00167 U	**0.00471 J**	0.0167 U	**0.00619 J**	**0.0131**
B28	D-B28-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.00165 U	**0.00284**	0.00165 U	0.00165 U	0.00165 U	**0.00248**	0.00165 U	0.00165 U	0.00165 U	0.00165 U	**0.00246**	0.00165 U	0.00165 U	0.0165 U	**0.00169**	**0.00246**
B28	D-B28-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	**0.00201**	0.00166 U	0.00166 U	0.00166 U	0.00166 U	**0.00233**	0.00166 U	0.00166 U	0.0166 U	0.00166 U	**0.00257**
B28	D-B28-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	0.00166 U	**0.00283**	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B29	D-B29-0-102719	0-0	27-Oct-19	MG/KG	0.00834 U	**0.0883**	**0.0726**	**0.287**	**0.392**	**0.456**	**0.265**	**0.142**	**0.325**	**0.045**	**0.603**	**0.0405**	**0.218**	0.0834 U	**0.641**	**0.75**
B29	D-B29-5.0-5.5	5.0-5.5	07-Nov-19	MG/KG	0.00167 U	**0.00226**	0.00167 U	**0.00661**	**0.00983**	**0.0122 J**	**0.0102**	**0.00358**	**0.00777**	0.00167 U	**0.0157**	0.00167 U	**0.00727**	0.0167 U	**0.012**	**0.0211 J**
B29	D-B29-10.0-10.5	10.0-10.5	07-Nov-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	**0.00596 J**	**0.00735 J**	**0.0102 J**	**0.00666 J**	**0.00267 J**	**0.00635 J**	0.00166 U	**0.00866 J**	0.00166 U	**0.00507 J**	0.0166 U	**0.00384 J**	**0.0107 J**
B29	D-B29-15.0-15.5	15.0-15.5	07-Nov-19	MG/KG	0.00167 U	**0.00628 J**	**0.00384 J**	**0.0376 J**	**0.0772 J**	**0.0766 J**	**0.0918 J**	**0.0253 J**	**0.046 J**	0.00167 U	**0.087 J**	0.00167 U	**0.062 J**	0.0167 U	**0.025 J**	**0.138 J**
B29	D-B29-20.0-20.5	20.0-20.5	07-Nov-19	MG/KG	0.00167 U	**0.00219 J**	**0.00183 J**	**0.012 J**	**0.022 J**	**0.0257 J**	**0.0165 J**	**0.00794 J**	**0.0143 J**	0.00167 U	**0.028 J**	0.00167 U	**0.0128 J**	0.0167 U	**0.00921 J**	**0.0409 J**
B30	D-B30-0-102719	0-0	28-Oct-19	MG/KG	0.00334 U	**0.00566**	**0.00735**	**0.0235**	**0.035**	**0.0644**	**0.021**	**0.0192**	**0.0335**	0.00334 U	**0.0624**	0.00334 U	**0.0175**	0.0334 U	**0.0281**	**0.0736**
B30	D-B30-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.00833 U	**0.0154**	**0.00931**	**0.0376**	**0.0672**	**0.0795**	**0.0744**	**0.0232**	**0.0484**	0.00833 U	**0.14**	0.00833 U	**0.0536**	0.0833 U	**0.1**	**0.172**
B30	D-FD01-110119	5.0-5.5	01-Nov-19	MG/KG	0.00832 U	**0.0125**	**0.0115**	**0.0439**	**0.0719**	**0.116**	**0.0533**	**0.0307**	**0.0631**	0.00832 U	**0.119**	0.00832 U	**0.0441**	0.0832 U	**0.0498**	**0.133**
B30	D-B30-10.0-10.5	10.0-10.5	01-Nov-19	MG/KG	0.00835 U	**0.0336**	**0.0219**	**0.0705**	**0.115**	**0.147**	**0.105**	**0.0405**	**0.0867**	0.00835 U	**0.226**	**0.0105**	**0.0795**	0.0835 U	**0.156**	**0.266**
B30	D-B30-15.0-15.5	15.0-15.5	01-Nov-19	MG/KG	0.00166 U	**0.00576**	**0.00379**	**0.0168**	**0.029**	**0.0372**	**0.0292**	**0.0109**	**0.0218**	0.00166 U	**0.0526**	0.00166 U	**0.0217**	0.0166 U	**0.025**	**0.0605**
B30	D-B30-19.5-20.0	19.5-20.0	01-Nov-19	MG/KG	0.00167 U	**0.00663**	**0.00556**	**0.0246**	**0.0424**	**0.0558**	**0.0394**	**0.0135**	**0.0327**	0.00167 U	**0.0748**	0.00167 U	**0.0297**	0.0167 U	**0.0379**	**0.0845**
B31	D-B31-0-102719	0-0	27-Oct-19	MG/KG	0.0167 U	0.0167 U	0.0167 U	**0.0182**	**0.0216**	**0.0355**	**0.0206**	0.0167 U	**0.0242**	0.0167 U	**0.0413**	0.0167 U	0.0167 U	0.167 U	**0.0169**	**0.0366**
B31	D-B31-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.00265 U	**0.0436**	**0.0254**	**0.115**	**0.217**	**0.274**	**0.109**	**0.081**	**0.149**	0.00166 U	**0.309**	**0.00748**	**0.0885**	**0.0168**	**0.164**	**0.439**
B31	D-B31-10.0-10.5	10.0-10.5	06-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B31	D-B31-15.0-15.5	15.0-15.5	06-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00241**	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00282**	0.00167 U	0.00167 U	0.0167 U	0.00167 U	**0.00314**
B31	D-B31-20.0-20.5	20.0-20.5	06-Nov-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.00166 U	0.0166 U	0.00166 U	0.00166 U
B32	D-B32-0-102719	0-0	27-Oct-19	MG/KG	0.0167 U	0.0167 U	0.0167 U	**0.0233**	**0.0319**	**0.0581**	**0.032**	0.0167 U	**0.0342**	0.0167 U	**0.058**	0.0167 U	**0.0258**	0.167 U	**0.0183**	**0.0515**
B32	D-B32-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.00167 U	**0.00212**	**0.00219**	**0.00468 J**	**0.00652 J**	**0.0113 J**	**0.00345 J**	**0.00328 J**	**0.00657 J**	0.00167 U	**0.0103 J**	0.00167 U	**0.00278 J**	0.0167 U	**0.00484 J**	**0.0123 J**
B32	B-FD02-102819	5.0-5.5	28-Oct-19	MG/KG	0.00166 U	**0.00333**	**0.00279**	**0.00975 J**	**0.0176 J**	**0.026 J**	**0.00904 J**	**0.00721 J**	**0.013 J**	0.00166 U	**0.0258 J**	0.00166 U	**0.00772 J**	0.0166 U	**0.00975 J**	**0.0358 J**
B32	D-B32-10.0-10.5	10.0-10.5	06-Nov-19	MG/KG	0.00167 U	**0.00289**	**0.00379**	**0.0134**	**0.0192**	**0.0339**	**0.011**	**0.00799**	**0.0176**	**0.00245**	**0.0288**	0.00167 U	**0.00987**	0.0167 U	**0.0107**	**0.0272**
B32	D-B32-15.0-15.5	15.0-15.5	06-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B32	D-B32-20.0-20.5	20.0-20.5	06-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B33	D-B33-0-102719	0-0	27-Oct-19	MG/KG	0.00834 U	0.00834 U	0.00834 U	0.00834 U	**0.00972**	**0.0184**	**0.0102**	0.00834 U	**0.0113**	0.00834 U	**0.0192**	0.00834 U	0.00834 U	0.0834 U	0.00834 U	**0.0175**
B33	D-B33-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.00333 U	**0.0241**	**0.0326**	**0.0745**	**0.112**	**0.169**	**0.051**	**0.0575**	**0.0967**	0.00333 U	**0.191**	**0.00471**	**0.0461**	0.0333 U	**0.096**	**0.244**
B33	D-B33-10.0-10.5	10.0-10.5	06-Nov-19	MG/KG	0.00166 U	**0.00292**	**0.00302**	**0.00986**	**0.0135**	**0.0286**	**0.00871**	**0.00756**	**0.0143**	**0.00253**	**0.0241**	0.00166 U	**0.00753**	0.0166 U	**0.0102**	**0.0191**
B33	D-B33-15.0-15.5	15.0-15.5	06-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00198**	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00217**	0.00167 U	0.00167 U	0.0167 U	0.00167 U	**0.00226**
B33	D-B33-20.0-20.5	20.0-20.5	06-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00178**	**0.00274**	**0.00552**	**0.00211**	**0.00176**	**0.00425**	0.00167 U	**0.006**	0.00167 U	**0.00175**	0.0167 U	0.00167 U	**0.0075**
B34	D-B34-0-102719	0-0	27-Oct-19	MG/KG	0.0167 U	0.0167 U	0.0167 U	**0.0335 J**	**0.0467 J**	**0.0888 J**	**0.0371 J**	**0.0221 J**	**0.0504 J**	0.0167 U	**0.0847 J**	0.0167 U	**0.0323 J**	0.167 U	**0.0273 J**	**0.0729 J**
B34	D-FD01-102819	0-0	27-Oct-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	0.00166 UJ	**0.00234 J**	**0.00385 J**	0.00166 UJ	0.00166 UJ	**0.0021 J**	0.00166 U	**0.00468 J**	0.00166 U	0.00166 UJ	0.0166 U	**0.00198 J**	**0.00575 J**
B34	D-B34-5.0-5.5-102819	5.0-5.5	28-Oct-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	**0.00228 J**	**0.00419 J**	0.00167 U	0.00167 U	**0.00191 J**	0.00167 U	**0.00314 J**	0.00167 U	0.00167 U	0.0167 U	0.00167 UJ	**0.00388 J**
B34	D-B34-10.0-10.5	10.0-10.5	06-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00405**	**0.00804**	**0.00966**	**0.00588**	**0.00302**	**0.00499**	0.00167 U	**0.0101**	0.00167 U	**0.00452**	0.0167 U	**0.00276**	**0.014**
B34	D-B34-15.0-15.5	15.0-15.5	06-Nov-19	MG/KG	0.00166 U	0.00166 U	0.00166 U	**0.00634**	**0.0109**	**0.0142**	**0.00731**	**0.00443**	**0.00809**	0.00166 U	**0.0158**	0.00166 U	**0.00593**	0.0166 U	**0.00647**	**0.0196**
B34	D-B34-20.0-20.5	20.0-20.5	06-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.0167 U	0.00167 U	0.00167 U
B35	D-B35-0-102719	0-0	27-Oct-19	MG/KG	0.0167 U	0.0167 U	0.0167 U	**0.0211**	**0.0285**	**0.0541**	**0.0247**	0.0167 U	**0.0311**	0.0167 U	**0.0513**	0.0167 U	**0.0191**	0.167 U	0.0167 U	**0.0442**
B35	D-B35-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.0167 U	0.0167 U	0.0167 U	**0.0225**	**0.0385**	**0.0501 J**	**0.0521**	0.0167 U	**0.0343 J**	0.0167 U	**0.0622 J**	0.0167 U	**0.0346**	0.167 U	**0.0182**	**0.0733 J**
B35	D-B35-10.0-10.5	10.0-10.5	05-Nov-19	MG/KG	0.00167 U	**0.0107**	**0.00893**	**0.0325**	**0.064**	**0.0898**	**0.0502**	**0.0255**	**0.0474**	0.00167 U	**0.0934**	0.00167 U	**0.039**	0.0167 U	**0.0408**	**0.114**
B35	D-B35-15.0-15.5	15.0-15.5	05-Nov-19	MG/KG	0.00167 U	0.00167 U	0.00167 U	**0.00266**	**0.00431**	**0.00604**	**0.00598**	**0.00187**	**0.00352**	0.00167 U	**0.00772**	0.00167 U	**0.00395**	0.0167 U	**0.00383**	**0.00917**
B35	D-B35-20.0-20.5	20.0-20.5	05-Nov-19	MG/KG	0.00167 U	**0.0127**	**0.00962**	**0.044**	**0.0882**	**0.117**	**0.076**	**0.0313**	**0.0629**	0.00167 U	**0.124**	0.00167 U	**0.0579**	0.0167 U	**0.049**	**0.155**

Notes:
Cells highlighted in red indicate that the compound exceeded the Residential Soil Remediation Level and Non-Residential Soil Remediation Level.
Cells highlighted in yellow indicate that the compound exceeded the Residential Soil Remediation Level only.
Detected results are shown in **Bold**.
J = Analyte is present but the reported value might not be accurate or precise (estimate).

Table 2-3. Summary of Analytical Data for Soil PAHs
APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
Residential Soil Remediation Level				MG/KG	3700	NE	22000	6.9	0.69	6.9	NE	69	680	0.69	2300	2700	6.9	56	NE	2300
Non-Residential Soil Remediation Level				MG/KG	29000	NE	240000	21	2.1	21	NE	210	2000	2.1	22000	26000	21	190	NE	29000
Groundwater Protection Level				MG/KG	90300	29100	7.96E+08	4.85E+25	6.58E+84	2.44E+84	NE	9.87E+82	8.46E+58	1.23E+251	6.67E+12	2.82E+06	NE	113	NE	6.93E+19

U = Analyte was not detected at the specified detection limit.
UJ = Analyte was not detected at the specified detection limit, detection limit is estimated.
ft bgs = foot (feet) below ground surface
ID = identification number
mg/kg = milligram(s) per kilogram
Groundwater protection levels are site specific (see text Section 4)

Table 2-4. Summary of Analytical Data for Soil Metals

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Residential Soil Remediation Level				MG/KG	10	15,000	39	120,000	400	23	390	390
Non-Residential Soil Remediation Level				MG/KG	10	170,000	510	1,000,000	800	310	5,100	5,100
Groundwater Protection Level				MG/KG	290	12,000	29	590	290	12	290	NE
B11	D-B11-1.0-1.5	1.0-1.5	30-Oct-19	MG/KG	12.9	125	1.89 U	11.2	93.2	0.0312	1.89 U	1.89 U
B11	D-B11-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	18.9	83.3	1.85 U	16.1	420	0.0478	1.85 U	1.85 U
B11	D-B11-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	19.5	300	2.00 U	17.8	141	0.0182 U	2.00 U	2.00 U
B11	D-B11-7.5-8.0	7.5-8.0	30-Oct-19	MG/KG	20.7	225	1.69 U	19.7	158	0.0216	1.69 U	1.69 U
B11	D-B11-10.0-10.5	10.0-10.5	30-Oct-19	MG/KG	23.5	126	1.79 U	30.2	63.7	0.0182 U	1.79 U	1.79 U
B11	D-B11-15.0-15.5	15.0-15.5	30-Oct-19	MG/KG	21.1	120	1.82 U	8.53	17.8	0.0175 U	1.82 U	1.82 U
B11	D-B11-19.5-20.0	19.5-20.0	30-Oct-19	MG/KG	16.4	76.4	1.96 U	11.8	16.4	0.0175 U	1.96 U	1.96 U
B12	D-B12-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	18	111	1.96 U	10	166	0.0302	1.96 U	1.96 U
B12	D-B12-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	14.1	136	1.69 U	9.32	8.74	0.0175 U	1.69 U	1.69 U
B12	D-B12-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	17.2	96	1.89 U	10.6	169	0.0387	1.89 U	1.89 U
B12	D-FD02-103119	5.0-5.5	31-Oct-19	MG/KG	16.9	109	1.75 U	12.5	113	0.0584	1.75 U	1.75 U
B12	D-B12-7.5-8.0	7.5-8.0	31-Oct-19	MG/KG	15.7	122	1.75 U	10.8	531	0.127	1.75 U	1.75 U
B12	D-B12-10.0-10.5	10.0-10.5	31-Oct-19	MG/KG	20.6	207	1.92 U	43.2	30.8	0.0182 U	1.92 U	1.92 U
B12	D-B12-15.0-15.5	15.0-15.5	31-Oct-19	MG/KG	23.1	225	1.75 U	38.9	21.1	0.0185 U	1.75 U	1.75 U
B12	D-B12-19.5-20	19.5-20.0	31-Oct-19	MG/KG	18.1	376	1.92 U	49.2	62.8	0.0182 U	1.92 U	1.92 U
B12	D-B12-24.5-25.0	24.5-25.0	31-Oct-19	MG/KG	4.16	44.2	1.69 U	23.1	8.74	0.0172 U	1.69 U	1.69 U
B13	D-B13-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	14.5	68.4	1.67 U	7.85	89.4	0.0427	1.67 U	1.67 U
B13	D-B13-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	18.9	540	2.00 U	12.9	17.9	0.0196 U	2.00 U	2.00 U
B13	D-B13-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	12	95.8	1.89 U	9.46	43.7	0.0239	1.89 U	1.89 U
B13	D-B13-7.5-8.0	7.5-8.0	31-Oct-19	MG/KG	24.5	247	1.96 U	19.1	49.8	0.0267	1.96 U	1.96 U
B13	D-B13-10.0-10.5	10.0-10.5	31-Oct-19	MG/KG	22.7	135	1.85 U	11.2	20.5	0.0196 U	1.85 U	1.85 U
B13	D-B13-15.0-15.5	15.0-15.5	31-Oct-19	MG/KG	21	76	1.79 U	6.13	10.6	0.0172 U	1.79 U	1.79 U
B13	D-FD01-103119	15.0-15.5	31-Oct-19	MG/KG	17.1	75.5	1.75 U	8.37	11.8	0.0185 U	1.75 U	1.75 U
B13	D-B13-19.5-20.0	19.5-20.0	31-Oct-19	MG/KG	12.1	70.5	1.75 U	18.7	6.7	0.0185 U	1.75 U	1.75 U
B14	D-B14-1.0-1.5	1.0-1.5	29-Oct-19	MG/KG	10.9	200	1.85 U	9.32	48.7	0.0238	1.85 U	1.85 U
B14	D-B14-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	17.9	93.5	1.96 U	9.83	9.49	0.0169 U	1.96 U	1.96 U
B14	D-B14-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	25.5	321	1.75 U	16.8	13.1	0.0189 U	1.75 U	1.75 U
B14	D-B14-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	21.3	247	1.89 U	16	23.2	0.0174	1.89 U	1.89 U
B14	D-B14-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	24.8	160	2.00 U	16.4	20.7	0.0172 U	2.00 U	2.00 U
B14	D-B14-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	24.5	185	1.67 U	23.5	14	0.0169 U	1.67 U	1.67 U
B14	D-B14-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	17.8	209	1.75 U	32.2	10.6	0.0167 U	1.75 U	1.75 U
B15	D-B15-1.0-1.5	1.0-1.5	01-Nov-19	MG/KG	9.77	144	2.00 U	7.42	56.2	0.0445	2.00 U	2.00 U
B15	D-B15-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	10.8 J	141	1.75 U	11.1 J	30.5 J	0.045	1.75 U	1.75 U
B15	D-B15-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	13.8	160	1.89 U	13.2	44.7	0.0391	1.89 U	1.89 U
B15	D-FD03-110119	5.0-5.5	01-Nov-19	MG/KG	15.2	98	1.69 U	15.1	30.5	0.0247	1.69 U	1.69 U
B15	D-B15-7.5-8.0	7.5-8.0	01-Nov-19	MG/KG	12.4	125	1.82 U	15.9	32.8	0.0212	1.82 U	1.82 U
B15	D-B15-10.0-10.5	10.0-10.5	01-Nov-19	MG/KG	21.6	254	1.89 U	14.6	12.6	0.020 U	1.89 U	1.89 U
B15	D-FD04-110119	10.0-10.5	01-Nov-19	MG/KG	24	302	1.82 U	21.7	15.5	0.0175 U	1.82 U	1.82 U
B15	D-B15-14.5-15.0	14.5-15.0	01-Nov-19	MG/KG	20.8	226	1.85 U	19.1	13	0.0185 U	1.85 U	1.85 U
B16	D-B16-0-102719	0-0	27-Oct-19	MG/KG	10.3	124	1.67 U	9.62	60.8	0.0625 U	1.67 U	1.67 U
B16	D-B16-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	11.5	117	1.67 U	11.1	42.5	0.0416	1.67 U	1.67 U
B16	D-FD01-102919	2.5-3.0	29-Oct-19	MG/KG	9.24	101	1.96 U	11.6	31.6	0.032	1.96 U	1.96 U
B16	D-B16-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	14.2	171	1.75 U	14.9	23.7	0.0225	1.75 U	1.75 U
B16	D-B16-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	13.4	123	1.85 U	19.9	28.7	0.0277	1.85 U	1.85 U
B16	D-B16-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	20.1	203	1.92 U	37	14.7	0.0179 U	1.92 U	1.92 U
B16	D-B16-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	23	284	1.96 U	129	15.4	0.0182 U	1.96 U	1.96 U
B16	D-FD02-102919	15.0-15.5	29-Oct-19	MG/KG	20.9	180	1.79 U	48.8	10	0.0169 U	1.79 U	1.79 U
B16	D-B16-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	17.7	181	1.89 U	37.5	9.81	0.020 U	1.89 U	1.89 U
B16	D-B17-0-102719	0-0	27-Oct-19	MG/KG	8.71	98	1.75 U	8.1	42.7	0.0415	1.75 U	1.75 U
B17	D-B17-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	12.6	86.3	1.72 U	10.1	43.6	0.0282	1.72 U	1.72 U
B17	D-B17-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	7.44	86.1	1.96 U	5.51	20.3	0.0475	1.96 U	1.96 U
B17	D-B17-7.5-8.0	7.5-8.0	30-Oct-19	MG/KG	17.3	96.3	1.79 U	12.1	37.7	0.0224	1.79 U	1.79 U
B17	D-B17-10.0-10.5	10.0-10.5	30-Oct-19	MG/KG	19.4	237	1.92 U	11.4	15.7	0.0179 U	1.92 U	1.92 U
B17	D-B17-15.0-15.5	15.0-15.5	30-Oct-19	MG/KG	16.7	250	1.67 U	7.87	10.8	0.0169 U	1.67 U	1.67 U
B17	D-B17-19.5-20.0	19.5-20.0	30-Oct-19	MG/KG	17.1	131	2.00 U	23.3	7.38	0.0172 U	2.00 U	2.00 U
B18	D-B18-0-102719	0-0	27-Oct-19	MG/KG	8.7	148	1.89 U	10	25.5	0.0202	1.89 U	1.89 U
B18	D-B18-2.0-2.5	2.0-2.5	28-Oct-19	MG/KG	16.4	65.7	1.67 U	8.37	25.2	0.0219	1.67 U	1.67 U
B18	D-B18-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	9.69 J	190	2.00 U	8.67 J	38.1 J	0.0237 U	2.00 U	2.00 U
B18	D-FD03-102819	5.0-5.5	28-Oct-19	MG/KG	20.7 J	215	2.00 U	16.6 J	15.6 J	0.0172 UJ	2.00 U	2.00 U
B18	D-B18-7.0-7.5	7.0-7.5	28-Oct-19	MG/KG	21.8	138	1.89 U	11.5	17.5	0.0179 U	1.89 U	1.89 U
B18	D-B18-10.0-10.5	10.0-10.5	05-Nov-19	MG/KG	16.3	39.5	1.89 U	8.93	13.3	0.0196 U	1.89 U	1.89 U
B18	D-B18-15.0-15.5	15.0-15.5	05-Nov-19	MG/KG	18.3	98.3	1.79 U	12.3	23	0.0382	1.79 U	1.79 U
B19	D-B19-0-102719	0-0	27-Oct-19	MG/KG	7.73	181	1.92 U	9.16	29.7	0.019	1.92 U	1.92 U
B19	D-B19-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	13.7	116	1.85 U	9.86	26.1	0.0169 U	1.85 U	1.85 U
B19	D-B19-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	20.6	937	1.69 U	12	11.6	0.0196 U	1.69 U	1.69 U
B19	D-B19-7.5-8.0	7.5-8.0	01-Nov-19	MG/KG	11.1	121	1.92 U	9.72	19.9	0.0179 U	1.92 U	1.92 U
B19	D-B19-10.0-10.5	10.0-10.5	02-Nov-19	MG/KG	14.2	138	1.92 U	16.9	12.3	0.0169 U	1.92 U	1.92 U
B19	D-B19-15.0-15.5	15.0-15.5	02-Nov-19	MG/KG	16.4	130	1.75 U	20.1	9.79	0.189 U	1.75 U	1.75 U
B19	D-B19-19.5-20.0	19.5-20.0	02-Nov-19	MG/KG	9.25	246	1.69 U	27.7	4.67	0.0192 U	1.69 U	1.69 U
B20	D-B20-0-102719	0-0	27-Oct-19	MG/KG	11.4	166	1.85 U	7.89	29.7	0.0391	1.85 U	1.85 U
B20	D-FD01-102719	0-0	27-Oct-19	MG/KG	14.7	218	1.89 U	12	42.5	0.0357	1.89 U	1.89 U
B20	D-B20-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	11.7 J	180	2.2	13.1 J	107	0.0707	1.72 U	1.72 U
B20	D-B20-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	21	96.3	1.79 U	12.4	112	0.0811	1.79 U	1.79 U
B20	D-B20-7.5-8.0	7.5-8.0	02-Nov-19	MG/KG	9.99	318	1.82 U	11.2	29.9	0.0304 J	1.82 U	1.82 U
B20	D-B20-9.5-10.0	9.5-10.0	02-Nov-19	MG/KG	15.4	273	1.92 U	9.77	19.9	0.0189 UJ	1.92 U	1.92 U
B20	D-B20-14.5-15.0	14.5-15.0	02-Nov-19	MG/KG	12.7	93.6	1.82 U	10.6	9.25	0.0196 U	1.82 U	1.82 U
B20	D-B20-19.5-20.0	19.5-20.0	02-Nov-19	MG/KG	8.99	36.9	1.92 U	18.7	5.25	0.0167 U	1.92 U	1.92 U
B21	D-B21-0-102719	0-0	27-Oct-19	MG/KG	7.38	97.5	1.89 U	7.94	33.8	0.0309	1.89 U	1.89 U
B21	D-B21-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	12.2	120	1.67 U	9.99	72.8	0.0532	1.67 U	1.67 U
B21	D-FD02-110119	2.5-3.0	01-Nov-19	MG/KG	9.37	95.2	1.92 U	8.56	55.3	0.0782	1.92 U	1.92 U
B21	D-B21-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	9.28	660	1.96 U	10.4	40.9	0.0317	1.96 U	1.96 U
B21	D-B21-7.5-8.0	7.5-8.0	01-Nov-19	MG/KG	19.7	144	1.92 U	14.7	54	0.0463	1.92 U	1.92 U
B21	D-B21-10.0-10.5	10.0-10.5	01-Nov-19	MG/KG	19.1	87.9	1.75 U	12.1	18.5	0.0192 U	1.75 U	1.75 U
B21	D-B21-15.0-15.5	15.0-15.5	01-Nov-19	MG/KG	19.6	232	1.69 U	17.8	53.8	0.0235	1.69 U	1.69 U
B21	D-B21-19.5-20.0	19.5-20.0	01-Nov-19	MG/KG	12.4	64.3	1.89 U	38.9	10.7	0.0192 U	1.89 U	1.89 U
B21	D-B21-24.5-25.0	24.5-25.0	01-Nov-19	MG/KG	7.08	89.3	1.85 U	28.5	8.11	0.0175 U	1.85 U	1.85 U

Table 2-4. Summary of Analytical Data for Soil Metals

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Residential Soil Remediation Level				MG/KG	**10**	**15,000**	**39**	**120,000**	**400**	**23**	**390**	**390**
Non-Residential Soil Remediation Level				MG/KG	**10**	**170,000**	**510**	**1,000,000**	**800**	**310**	**5,100**	**5,100**
Groundwater Protection Level				MG/KG	**290**	**12,000**	**29**	**590**	**290**	**12**	**290**	**NE**
B22	D-B22-0-102719	0-0	27-Oct-19	MG/KG	**9.18**	**111**	1.92 U	**9.8**	**50.1**	**0.0734**	1.92 U	1.92 U
B22	D-B22-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	**15.4**	**127**	1.96 U	**13.1**	**11.2**	0.0189 U	1.96 U	1.96 U
B22	D-B22-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	**25.8**	**245**	1.92 U	**9.75**	**117**	**0.0263**	1.92 U	1.92 U
B22	D-B22-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	**16.7**	**150**	2.00 U	**13.6**	**25.7**	0.0172 U	2.00 U	2.00 U
B22	D-B22-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	**22**	**146**	2.00 U	**22.6**	**32.3**	0.0189 U	2.00 U	2.00 U
B22	D-B22-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	**25**	**212**	1.85 U	**63**	**21.6**	0.0192 U	1.85 U	1.85 U
B23	D-B23-0-102719	0-0	27-Oct-19	MG/KG	**9.68**	**146**	2.00 U	**8.28**	**25.8**	**0.022**	2.00 U	2.00 U
B23	D-B23-25-3.0	2.5-3.0	31-Oct-19	MG/KG	**14.8**	**477**	1.75 U	**12.1**	**69**	**0.0269**	1.75 U	1.75 U
B23	D-FD03-103119	2.5-3.0	31-Oct-19	MG/KG	**17.3**	**319**	1.85 U	**14**	**46.4**	**0.0332**	1.85 U	1.85 U
B23	D-B23-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	**26**	**764**	1.89 U	**20.7**	**18.7**	0.0175 U	1.89 U	1.89 U
B23	D-B23-7.5-8.0	7.5-8.0	31-Oct-19	MG/KG	**23.9**	**91.8**	1.85 U	**14.6**	**9.97**	0.0192 U	1.85 U	1.85 U
B23	D-B23-9.5-10.0	9.5-10.0	31-Oct-19	MG/KG	**15.3**	**84.6**	1.69 U	**7**	**10.3**	0.0189 U	1.69 U	1.69 U
B23	D-B23-14.5-15.0	14.5-15.0	31-Oct-19	MG/KG	**42.5**	**53.3**	1.85 U	**11.3**	**10.6**	0.0196 U	1.85 U	1.85 U
B23	D-B23-19.5-20.0	19.5-20.0	31-Oct-19	MG/KG	**12.6**	**88.8**	1.67 U	**9.66**	**12.7**	0.0172 U	1.67 U	1.67 U
B24	D-B24-0-102719	0-0	28-Oct-19	MG/KG	**10.3**	**160**	1.92 U	**11.6**	**66.9**	**0.0453**	1.92 U	1.92 U
B24	D-B24-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	**12.3**	**110**	1.85 U	**8.67**	**9.28**	0.020 U	1.85 U	1.85 U
B24	D-B24-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	**41.6**	**174**	1.72 U	**12.4**	**13.2**	0.0196 U	1.72 U	1.72 U
B24	D-B24-7.5-8.0	7.5-8.0	30-Oct-19	MG/KG	**11.1**	**87.8**	1.82 U	**7.56**	**22.9**	0.0167 U	1.82 U	1.82 U
B24	D-B24-10.0-10.5	10.0-10.5	30-Oct-19	MG/KG	**20.6**	**80**	1.72 U	**9.03**	**77.3**	0.0189 U	1.72 U	1.72 U
B24	D-B24-15.0-15.5	15.0-15.5	30-Oct-19	MG/KG	**16.4**	**290**	1.96 U	**5**	**11.7**	0.0172 U	1.96 U	1.96 U
B24	D-B24-19.5-20.0	19.5-20.0	30-Oct-19	MG/KG	**7.55**	**43.7**	1.85 U	**19.5**	**10.5**	0.0179 U	1.85 U	1.85 U
B24	D-FD01-103019	19.5-20.0	30-Oct-19	MG/KG	**8.2**	**46.1**	1.69 U	**17.4**	**22.3**	0.0175 U	1.69 U	1.69 U
B25	D-B25-0-102719	0-0	27-Oct-19	MG/KG	**10.9**	**175**	1.92 U	**9.85**	**57.5**	**0.0461**	1.92 U	1.92 U
B25	D-B25-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	**14.8**	**174**	1.85 U	**11.9**	**9.12**	0.0192 U	1.85 U	1.85 U
B25	D-B25-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	**50.3**	**126**	1.67 U	**14**	**13.8**	0.0179 U	1.67 U	1.67 U
B25	D-B25-7.5-8.0	7.5-8.0	30-Oct-19	MG/KG	**22.2**	**89.3**	1.67 U	**12.1**	**15.2**	0.0185 U	1.67 U	1.67 U
B25	D-B25-10.0-10.5	10.0-10.5	31-Oct-19	MG/KG	**23.7**	**165**	1.92 U	**14.7**	**11.9**	0.0185 U	1.92 U	1.92 U
B25	D-B25-25.0-25.5	25.0-25.5	31-Oct-19	MG/KG	**5.23**	**35.2**	1.96 U	**21**	**10.9**	0.0192 U	1.96 U	1.96 U
B25	D-B25-40.0-40.5	40.0-40.5	31-Oct-19	MG/KG	**7.22**	**55.4**	1.85 U	**11**	**10.1**	0.0192 U	1.85 U	1.85 U
B25	D-FD04-103119	40.0-40.5	31-Oct-19	MG/KG	**8.13**	**68.3**	1.85 U	**14.4**	**15.9**	0.0192 U	1.85 U	1.85 U
B26	D-B26-0-102719	0-0	28-Oct-19	MG/KG	**8.55**	**103**	1.72 U	**6.67**	**41.4**	0.0182 U	1.72 U	1.72 U
B26	D-B26-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	**11.7**	**112**	1.79 U	**11.8**	**9.72**	0.0189 UJ	1.79 U	1.79 U
B26	D-FD05-110119	2.5-3.0	01-Nov-19	MG/KG	**13.4**	**130**	1.69 U	**11.7**	**11.2**	0.0192 UJ	1.69 U	1.69 U
B26	D-B26-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	**21.2 J**	**81.2**	1.67 U	**9.13**	**9.02**	0.0175 U	1.67 U	1.67 U
B26	D-B26-7.5-8.0	7.5-8.0	02-Nov-19	MG/KG	**21.6**	**96.3**	1.82 U	**7.89**	**14.1**	0.0192 UJ	1.82 U	1.82 U
B26	D-B26-10.0-10.5	10.0-10.5	02-Nov-19	MG/KG	**17.3**	**241**	1.75 U	**8.54**	**17.4**	0.0192 U	1.75 U	1.75 U
B26	D-B26-15.0-15.5	15.0-15.5	02-Nov-19	MG/KG	**16.9**	**134**	1.67 U	**3.78**	**9.47**	0.0185 UJ	1.67 U	1.67 U
B26	D-B26-20.0-20.5	20.0-20.5	02-Nov-19	MG/KG	**18.2**	**906**	1.96 U	**16.1**	**11.6**	0.0189 UJ	1.96 U	1.96 U
B26	D-B26-25.0-25.5	25.0-25.5	02-Nov-19	MG/KG	**8.17**	**54.5**	1.67 U	**9.34**	**4.13**	0.0192 UJ	1.67 U	1.67 U
B27	D-B27-0-102719	0-0	27-Oct-19	MG/KG	**13.9**	**70.5**	2.00 U	**8.01**	**16.1**	**0.0227**	2.00 U	2.00 U
B27	D-B27-2.5-3.0	2.5-3.0	03-Nov-19	MG/KG	**15.4**	**426 J**	2.00 U	**8.79**	**11.8**	0.0182 U	2.00 U	2.00 U
B27	D-FD01-110319	2.5-3.0	03-Nov-19	MG/KG	**13.8**	**142 J**	1.79 U	**9.14**	**12.2**	0.0185 U	1.79 U	1.79 U
B27	D-B27-5.0-5.5	5.0-5.5	03-Nov-19	MG/KG	**24.1**	**151**	1.67 U	**11.8**	**12**	0.0172 U	1.67 U	1.67 U
B27	D-B27-7.5-8.0	7.5-8.0	03-Nov-19	MG/KG	**21.2**	**171**	1.69 U	**10.3**	**12.3**	0.0196 U	1.69 U	1.69 U
B27	D-B27-10.0-10.5	10.0-10.5	03-Nov-19	MG/KG	**20.7**	**84.7 J**	1.75 U	**16.5**	**11.1**	0.0185 U	1.75 U	1.75 U
B27	D-B27-15.0-15.5	15.0-15.5	03-Nov-19	MG/KG	**20.6**	**149**	1.92 U	**14**	**13**	0.0189 U	1.92 U	1.92 U
B27	D-B27-20.0-20.5	20.0-20.5	03-Nov-19	MG/KG	**15.2**	**202**	1.92 U	**5.12**	**17**	0.0172 U	1.92 U	1.92 U
B27	D-B27-25.0-25.5	25.0-25.5	03-Nov-19	MG/KG	**12.1**	**41.6**	1.72 U	**6.93**	**12.2**	0.0172 UJ	1.72 U	1.72 U
B27	D-FD02-110319	25.0-25.5	03-Nov-19	MG/KG	**13.1**	**42.7**	1.89 U	**7.93**	**11.9**	0.0179 UJ	1.89 U	1.89 U
B27	D-FD01-110219	30.0-30.5	02-Nov-19	MG/KG	**12.1**	**18.9**	1.85 U	**5.26**	**8.24**	0.0172 UJ	1.85 U	1.85 U
B28	D-B28-0-102719	0-0	27-Oct-19	MG/KG	**9.02**	**93.7**	1.96 U	**6.96**	**45.9**	**0.0513**	1.96 U	1.96 U
B28	D-B28-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	**16.1**	**84.3**	1.89 U	**9.3**	**10.9**	0.0185 U	1.89 U	1.89 U
B28	D-FD03-102919	5.0-5.5	29-Oct-19	MG/KG	**23.1**	**110**	1.72 U	**11.6**	**18.2**	0.0167 U	1.72 U	1.72 U
B28	D-B28-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	**9.21**	**94.4**	2.00 U	**10.3**	**9.89**	0.0185 U	2.00 U	2.00 U
B28	D-B28-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	**14.2**	**82.8 J**	1.67 U	**12**	**11.2**	0.0169 U	1.67 U	1.67 U
B28	D-B28-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	**15.1**	**129**	1.75 U	**20.7**	**17.7**	0.020 U	1.75 U	1.75 U
B29	D-B29-0-102719	0-0	27-Oct-19	MG/KG	**7.22**	**62.9**	1.82 U	**6.16**	**22.2**	**0.0574**	1.82 U	1.82 U
B29	D-B29-5.0-5.5	5.0-5.5	07-Nov-19	MG/KG	**15.9 J**	**178**	1.85 U	**18.1 J**	**32.8 J**	**0.0494**	1.85 U	1.85 UJ
B29	D-B29-10.0-10.5	10.0-10.5	07-Nov-19	MG/KG	**15.1**	**607**	1.92 U	**12.6**	**12.6**	0.0192 U	1.92 U	1.92 U
B29	D-B29-15.0-15.5	15.0-15.5	07-Nov-19	MG/KG	**20.4**	**413**	1.96 U	**15**	**20.3**	0.020 U	1.96 U	1.96 U
B29	D-B29-20.0-20.5	20.0-20.5	07-Nov-19	MG/KG	**22.5**	**275**	1.75 U	**12.4**	**14.1**	0.0189 U	1.75 U	1.75 U
B30	D-B30-0-102719	0-0	28-Oct-19	MG/KG	**9.51**	**139**	1.85 U	**10.4**	**40.1**	**0.0249**	1.85 U	1.85 U
B30	D-B30-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	**12.6**	**133**	1.85 U	**10.2**	**26.8 J**	0.0182 UJ	1.85 U	1.85 U
B30	D-FD01-110119	5.0-5.5	01-Nov-19	MG/KG	**11.5**	**162**	1.89 U	**11.5**	**52.3 J**	**0.0208 J**	1.89 U	1.89 U
B30	D-B30-10.0-10.5	10.0-10.5	01-Nov-19	MG/KG	**9.78**	**112**	1.85 U	**8.93**	**36.8**	**0.025**	1.85 U	1.85 U
B30	D-B30-15.0-15.5	15.0-15.5	01-Nov-19	MG/KG	**15.4**	**130**	1.69 U	**14**	**14.1**	0.0192 U	1.69 U	1.69 U
B30	D-B30-19.5-20.0	19.5-20.0	01-Nov-19	MG/KG	**16**	**142**	1.82 U	**21.8**	**15.9**	0.0189 U	1.82 U	1.82 U
B31	D-B31-0-102719	0-0	27-Oct-19	MG/KG	**9.08**	**186**	1.92 U	**10.3**	**34.8**	**0.0211**	1.92 U	1.92 U
B31	D-B31-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	**17.6**	**143**	1.96 U	**11.4**	**98.2**	**0.228**	1.96 U	1.96 U
B31	D-B31-10.0-10.5	10.0-10.5	06-Nov-19	MG/KG	**12.8**	**211**	1.82 U	**8.25**	**6.48**	0.0185 U	1.82 U	1.82 U
B31	D-B31-15.0-15.5	15.0-15.5	06-Nov-19	MG/KG	**18.4**	**114**	1.85 U	**13.4**	**6.87**	0.0169 U	1.85 U	1.85 U
B31	D-B31-20.0-20.5	20.0-20.5	06-Nov-19	MG/KG	**12.6**	**767**	1.75 U	**10.6**	**7.26**	0.0182 U	1.75 U	1.75 U
B32	D-B32-0-102719	0-0	27-Oct-19	MG/KG	**8.73**	**176**	2.00 U	**9.26**	**48.3**	**0.0294**	2.00 U	2.00 U
B32	D-B32-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	**7.13**	**107**	1.85 U	**8.2 J**	**62.5**	**0.0492 J**	1.85 U	1.85 U
B32	B-FD02-102819	5.0-5.5	28-Oct-19	MG/KG	**10.3**	**114**	1.67 U	**4.01 J**	**40.5**	0.0192 UJ	1.67 U	1.67 U
B32	D-B32-10.0-10.5	10.0-10.5	06-Nov-19	MG/KG	**8.49**	**156**	1.67 U	**7.09**	**27.7**	**0.0336**	1.67 U	1.67 U
B32	D-B32-15.0-15.5	15.0-15.5	06-Nov-19	MG/KG	**10.3**	**241**	1.67 U	**10.5**	**3.86**	0.0169 U	1.67 U	1.67 U
B32	D-B32-20.0-20.5	20.0-20.5	06-Nov-19	MG/KG	**9.75**	**236**	1.72 U	**14**	**5.19**	0.0192 U	1.72 U	1.72 U
B33	D-B33-0-102719	0-0	27-Oct-19	MG/KG	**7.47**	**149**	1.85 U	**8.64**	**29.7**	**0.0289**	1.85 U	1.85 U
B33	D-B33-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	**20.6**	**158**	**2.78**	**14**	**222**	**0.242**	1.89 U	1.89 U
B33	D-B33-10.0-10.5	10.0-10.5	06-Nov-19	MG/KG	**9.04**	**65.1**	1.67 U	**9.26**	**11.7**	0.0196 U	1.67 U	1.67 U
B33	D-B33-15.0-15.5	15.0-15.5	06-Nov-19	MG/KG	**32.6**	**201**	1.89 U	**16.7**	**9.69**	0.0167 U	1.89 U	1.89 U
B33	D-B33-20.0-20.5	20.0-20.5	06-Nov-19	MG/KG	**10**	**212**	1.75 U	**9.87**	**9.34**	0.0172 U	1.75 U	1.75 U
B34	D-B34-0-102719	0-0	27-Oct-19	MG/KG	**11.3**	**208 J**	1.92 U	**11**	**41.3 J**	**0.0288 J**	1.92 U	1.92 U
B34	D-FD01-102819	0-0	28-Oct-19	MG/KG	**14.8**	**76.4 J**	1.72 U	**10.5**	**12.6 J**	0.0185 UJ	1.72 U	1.72 U
B34	D-B34-5.0-5.5-102819	5.0-5.5	28-Oct-19	MG/KG	**9.45**	**104**	1.92 U	**10.6**	**14.1**	0.0196 U	1.92 U	1.92 U

Table 2-4. Summary of Analytical Data for Soil Metals
APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Residential Soil Remediation Level				MG/KG	**10**	**15,000**	**39**	**120,000**	**400**	**23**	**390**	**390**
Non-Residential Soil Remediation Level				MG/KG	**10**	**170,000**	**510**	**1,000,000**	**800**	**310**	**5,100**	**5,100**
Groundwater Protection Level				MG/KG	**290**	**12,000**	**29**	**590**	**290**	**12**	**290**	**NE**
B34	D-B34-10.0-10.5	10.0-10.5	06-Nov-19	MG/KG	**15.7**	**195**	2.00 U	**6.74**	**7.7**	0.0175 U	2.00 U	2.00 U
B34	D-B34-15.0-15.5	15.0-15.5	06-Nov-19	MG/KG	**8.59**	**84.2**	1.82 U	**6.19**	**10.1**	**0.0315**	1.82 U	1.82 U
B34	D-B34-20.0-20.5	20.0-20.5	06-Nov-19	MG/KG	**9.21**	**99.1**	1.67 U	**11.8**	**10.8**	0.0196 U	1.67 U	1.67 U
B35	D-B35-0-102719	0-0	27-Oct-19	MG/KG	**7.69**	**181**	1.89 U	**10.1**	**30.3**	**0.0268**	1.89 U	1.89 U
B35	D-B35-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	**13**	**174**	1.89 U	**14.1**	**29.9 J**	**0.000228**	1.89 U	1.89 U
B35	D-B35-10.0-10.5	10.0-10.5	05-Nov-19	MG/KG	**14.6**	**132**	1.85 U	**11.6**	**24.1**	0.0196 U	1.85 U	1.85 U
B35	D-B35-15.0-15.5	15.0-15.5	05-Nov-19	MG/KG	**13.8**	**170**	1.85 U	**12.8**	**13.8**	0.0172 U	1.85 U	1.85 UJ
B35	D-B35-20.0-20.5	20.0-20.5	05-Nov-19	MG/KG	**14.2**	**34.7**	1.85 U	**12.7**	**12.6**	**0.0261**	1.85 U	1.85 U

Notes:
Cells highlighted in red indicate that the compound exceeded the Residential Soil Remediation Level and Non-Residential Soil Remediation Level.
Cells highlighted in yellow indicate that the compound exceeded the Residential Soil Remediation Level only.
Cells highlighted in blue indicate that the compound exceeded the minimum Groundwater ProtectionLevel and Residential Soil Remediation Level.
Detected results are shown in **Bold**.
Groundwater Protection Levels are the minimum values from Table 4 of ADEQ (1996). A site-specific groundwater protection level was calculated for lead (refer to Section 4).
J = Analyte is present but the reported value might not be accurate or precise (estimate).
U = Analyte was not detected at the specified detection limit.
UJ = Analyte was not detected at the specified detection limit, detection limit is estimated.
ft bgs = foot (feet) below ground surface
ID = identification number
mg/kg = milligram(s) per kilogram

Table 2-5. Summary of Analytical Data for Soil VOCs

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene
Residential Soil Remediation Level				MG/KG	**3.2**	**1200**	**0.42**	**0.74**	**510**	**120**	**NE**	**NE**	**0.005**	**62**	**52**	**0.53**	**0.029**	**600**	**0.28**	**0.34**	**21**
Non-Residential Soil Remediation Level				MG/KG	**73**	**1200**	**9.3**	**16**	**1700**	**410**	**NE**	**NE**	**0.11**	**220**	**170**	**6.5**	**0.63**	**600**	**6**	**7.4**	**70**
Groundwater Protection Level				MG/KG	**NE**	**0.94**	**NE**	**NE**	**NE**	**0.85**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**116**	**0.23**	**0.36**	**NE**
B11	D-B11-1.0-1.5	1.0-1.5	30-Oct-19	MG/KG	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U
B11	D-B11-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U
B12	D-B12-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U
B12	D-B12-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
B12	D-B12-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
B12	D-FD02-103119	5.0-5.5	31-Oct-19	MG/KG	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U
B13	D-B13-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U
B13	D-B13-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U
B14	D-B14-1.0-1.5	1.0-1.5	29-Oct-19	MG/KG	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U
B15	D-B15-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U
B15	D-FD03-110119	5.0-5.5	01-Nov-19	MG/KG	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U
B16	D-B16-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U
B16	D-FD01-102919	2.5-3.0	29-Oct-19	MG/KG	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U
B16	D-B16-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U
B16	D-B16-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U
B16	D-B16-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U
B16	D-FD02-102919	15.0-15.5	29-Oct-19	MG/KG	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
B16	D-B16-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U
B16	D-B16-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U
B17	D-B17-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
B19	D-B19-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U
B21	D-B21-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U
B21	D-FD02-110119	2.5-3.0	01-Nov-19	MG/KG	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U
B25	D-B25-0-102719	0-0	27-Oct-19	MG/KG	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U
B25	D-B25-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U
B28	D-B28-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U
B28	D-FD03-102919	5.0-5.5	29-Oct-19	MG/KG	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U
B29	D-B29-5.0-5.5	5.0-5.5	07-Nov-19	MG/KG	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
B30	D-B30-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U
B30	D-FD01-110119	5.0-5.5	01-Nov-19	MG/KG	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U
B35	D-B35-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U
TAR	D-TAR-01	--	02-Nov-19	MG/KG	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U

Table 2-5. Summary of Analytical Data for Soil VOCs

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	1,3-Butadiene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone	2-Chlorotoluene	2-Hexanone	4-Chlorotoluene	4-Ethyltoluene	4-Methyl-2-Pentanone	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform
Residential Soil Remediation Level				MG/KG	**0.058**	**530**	**100**	**3.5**	**NE**	**NE**	**160**	**NE**	**NE**	**NE**	**5300**	**14000**	**0.65**	**28**	**NE**	**0.83**	**69**
Non-Residential Soil Remediation Level				MG/KG	**1.2**	**600**	**360**	**79**	**NE**	**NE**	**510**	**NE**	**NE**	**NE**	**17000**	**54000**	**1.4**	**92**	**NE**	**18**	**2200**
Groundwater Protection Level				MG/KG	**NE**	**NE**	**NE**	**27**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.70**	**NE**	**NE**	**NE**	**NE**
B11	D-B11-1.0-1.5	1.0-1.5	30-Oct-19	MG/KG	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	1.05 U	0.263 U	2.63 U	0.263 U	0.263 U	2.63 U	5.26 U	0.0526 U	0.263 U	0.263 U	0.263 U	0.263 U
B11	D-B11-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	1.06 U	0.265 U	2.65 U	0.265 U	0.265 U	2.65 U	5.31 U	0.0531 U	0.265 U	0.265 U	0.265 U	0.265 U
B12	D-B12-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	1.01 U	0.253 U	2.53 U	0.253 U	0.253 U	2.53 U	5.06 U	0.0506 U	0.253 U	0.253 U	0.253 U	0.253 U
B12	D-B12-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.882 U	0.22 U	2.2 U	0.22 U	0.22 U	2.2 U	4.41 U	0.0441 U	0.22 U	0.22 U	0.22 U	0.22 U
B12	D-B12-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.839 U	0.21 U	2.1 U	0.21 U	0.21 U	2.1 U	4.19 U	0.0419 U	0.21 U	0.21 U	0.21 U	0.21 U
B12	D-FD02-103119	5.0-5.5	31-Oct-19	MG/KG	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.856 U	0.214 U	2.14 U	0.214 U	0.214 U	2.14 U	4.28 U	0.0428 U	0.214 U	0.214 U	0.214 U	0.214 U
B13	D-B13-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	1.15 U	0.289 U	2.89 U	0.289 U	0.289 U	2.89 U	5.77 U	**0.509**	0.289 U	0.289 U	0.289 U	0.289 U
B13	D-B13-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.971 UJ	0.243 U	2.43 U	0.243 U	0.243 U	2.43 U	4.85 U	0.0485 U	0.243 U	0.243 U	0.243 U	0.243 U
B14	D-B14-1.0-1.5	1.0-1.5	29-Oct-19	MG/KG	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	1.07 U	0.268 U	2.68 U	0.268 U	0.268 U	2.68 U	5.35 U	0.0535 U	0.268 U	0.268 U	0.268 U	0.268 U
B15	D-B15-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.988 U	0.247 U	2.47 U	0.247 U	0.247 U	2.47 U	4.94 U	0.0494 U	0.247 U	0.247 U	0.247 U	0.247 U
B15	D-FD03-110119	5.0-5.5	01-Nov-19	MG/KG	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.996 U	0.249 U	2.49 U	0.249 U	0.249 U	2.49 U	4.98 U	0.0498 U	0.249 U	0.249 U	0.249 U	0.249 U
B16	D-B16-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	1.07 U	0.268 U	2.68 U	0.268 U	0.268 U	2.68 U	5.35 U	0.0535 U	0.268 U	0.268 U	0.268 U	0.268 U
B16	D-FD01-102919	2.5-3.0	29-Oct-19	MG/KG	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.996 U	0.249 U	2.49 U	0.249 U	0.249 U	2.49 U	4.98 U	0.0498 U	0.249 U	0.249 U	0.249 U	0.249 U
B16	D-B16-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	1.18 U	0.296 U	2.96 U	0.296 U	0.296 U	2.96 U	5.91 U	0.0591 U	0.296 U	0.296 U	0.296 U	0.296 U
B16	D-B16-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	1.18 U	0.296 U	2.96 U	0.296 U	0.296 U	2.96 U	5.92 U	0.0592 U	0.296 U	0.296 U	0.296 U	0.296 U
B16	D-B16-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	1.07 U	0.267 U	2.67 U	0.267 U	0.267 U	2.67 U	5.34 U	0.0534 U	0.267 U	0.267 U	0.267 U	0.267 U
B16	D-FD02-102919	15.0-15.5	29-Oct-19	MG/KG	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	1.04 U	0.26 U	2.6 U	0.26 U	0.26 U	2.6 U	5.2 U	0.052 U	0.26 U	0.26 U	0.26 U	0.26 U
B16	D-B16-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	1.1 U	0.275 U	2.75 U	0.275 U	0.275 U	2.75 U	5.49 U	0.0549 U	0.275 U	0.275 U	0.275 U	0.275 U
B16	D-B16-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	1.17 U	0.291 U	2.91 U	0.291 U	0.291 U	2.91 U	5.83 U	0.0583 U	0.291 U	0.291 U	0.291 U	0.291 U
B17	D-B17-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	1.08 U	0.27 U	2.7 U	0.27 U	0.27 U	2.7 U	5.4 U	0.054 U	0.27 U	0.27 U	0.27 U	0.27 U
B19	D-B19-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	1.05 U	0.262 U	2.62 U	0.262 U	0.262 U	2.62 U	5.24 U	0.0524 U	0.262 U	0.262 U	0.262 U	0.262 U
B21	D-B21-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.936 U	0.234 U	2.34 U	0.234 U	0.234 U	2.34 U	4.68 U	0.0468 U	0.234 U	0.234 U	0.234 U	0.234 U
B21	D-FD02-110119	2.5-3.0	01-Nov-19	MG/KG	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.877 U	0.219 U	2.19 U	0.219 U	0.219 U	2.19 U	4.39 U	0.0439 U	0.219 U	0.219 U	0.219 U	0.219 U
B25	D-B25-0-102719	0-0	27-Oct-19	MG/KG	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	1.26 U	0.314 U	3.14 U	0.314 U	0.314 U	3.14 U	6.28 U	0.0628 U	0.314 U	0.314 U	0.314 U	0.314 U
B25	D-B25-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.901 U	0.225 U	2.25 U	0.225 U	0.225 U	2.25 U	4.5 U	0.045 U	0.225 U	0.225 U	0.225 U	0.225 U
B28	D-B28-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	1.04 U	0.259 U	2.59 U	0.259 U	0.259 U	2.59 U	5.18 U	0.0518 U	0.259 U	0.259 U	0.259 U	0.259 U
B28	D-FD03-102919	5.0-5.5	29-Oct-19	MG/KG	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.906 U	0.226 U	2.26 U	0.226 U	0.226 U	2.26 U	4.53 U	0.0453 U	0.226 U	0.226 U	0.226 U	0.226 U
B29	D-B29-5.0-5.5	5.0-5.5	07-Nov-19	MG/KG	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.978 UJ	0.245 U	2.45 U	0.245 U	0.245 U	2.45 U	4.89 UJ	0.0489 U	0.245 U	0.245 U	0.245 U	0.245 U
B30	D-B30-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.853 U	0.213 U	2.13 U	0.213 U	0.213 U	2.13 U	4.27 U	0.0427 U	0.213 U	0.213 U	0.213 U	0.213 U
B30	D-FD01-110119	5.0-5.5	01-Nov-19	MG/KG	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	1.06 U	0.266 U	2.66 U	0.266 U	0.266 U	2.66 U	5.32 U	0.0532 U	0.266 U	0.266 U	0.266 U	0.266 U
B35	D-B35-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	1.3 U	0.324 U	3.24 U	0.324 U	0.324 U	3.24 U	6.48 U	0.0648 U	0.324 U	0.324 U	0.324 U	0.324 UJ
TAR	D-TAR-01	--	02-Nov-19	MG/KG	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	2.01 U	0.502 U	5.02 U	0.502 U	0.502 U	5.02 U	10 U	0.1 U	0.502 U	0.502 U	0.502 U	0.502 U

Table 2-5. Summary of Analytical Data for Soil VOCs
APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dicyclopentadiene	Ethylbenzene	Hexachlorobutadiene	Iodomethane (Methyl Iodide)
Residential Soil Remediation Level				MG/KG	**3.9**	**360**	**0.25**	**150**	**3**	**0.94**	**48**	**43**	**NE**	**140**	**1.1**	**67**	**94**	**0.54**	**400**	**7**	**NE**
Non-Residential Soil Remediation Level				MG/KG	**13**	**720**	**5.5**	**530**	**65**	**20**	**160**	**150**	**NE**	**140**	**26**	**230**	**310**	**1.8**	**400**	**180**	**NE**
Groundwater Protection Level				MG/KG	**NE**	**NE**	**0.95**	**16.5**	**NE**	**NE**	**NE**	**5.30**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**82**	**NE**	**NE**
B11	D-B11-1.0-1.5	1.0-1.5	30-Oct-19	MG/KG	0.263 U	0.263 U	0.263 U	0.263 U	0.526 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.0526 U	0.263 U	1.05 U
B11	D-B11-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.265 U	0.265 U	0.265 U	0.265 U	0.531 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.0531 U	0.265 U	1.06 U
B12	D-B12-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.253 U	0.253 U	0.253 U	0.253 U	0.506 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.0506 U	0.253 U	1.01 U
B12	D-B12-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.22 U	0.22 U	0.22 U	0.22 U	0.441 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.0441 U	0.22 U	0.882 U
B12	D-B12-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	0.21 U	0.21 U	0.21 U	0.21 U	0.419 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.0419 U	0.21 U	0.839 U
B12	D-FD02-103119	5.0-5.5	31-Oct-19	MG/KG	0.214 U	0.214 U	0.214 U	0.214 U	0.428 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.0428 U	0.214 U	0.856 U
B13	D-B13-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.289 U	0.289 U	0.289 U	0.289 U	0.577 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.0577 U	0.289 U	1.15 U
B13	D-B13-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.243 UJ	0.243 U	0.243 U	0.243 U	0.485 UJ	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.0485 U	0.243 U	0.971 U
B14	D-B14-1.0-1.5	1.0-1.5	29-Oct-19	MG/KG	0.268 U	0.268 U	0.268 U	0.268 U	0.535 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.0535 U	0.268 U	1.07 U
B15	D-B15-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.247 U	0.247 U	0.247 U	0.247 U	0.494 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.0494 U	0.247 U	0.988 U
B15	D-FD03-110119	5.0-5.5	01-Nov-19	MG/KG	0.249 U	0.249 U	0.249 U	0.249 U	0.498 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.0498 U	0.249 U	0.996 U
B16	D-B16-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	0.268 U	0.268 U	0.268 U	0.268 U	0.535 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.0535 U	0.268 U	1.07 U
B16	D-FD01-102919	2.5-3.0	29-Oct-19	MG/KG	0.249 U	0.249 U	0.249 U	0.249 U	0.498 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.0498 U	0.249 U	0.996 U
B16	D-B16-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.296 U	0.296 U	0.296 U	0.296 U	0.591 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.0591 U	0.296 U	1.18 U
B16	D-B16-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.296 U	0.296 U	0.296 U	0.296 U	0.592 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.0592 U	0.296 U	1.18 U
B16	D-B16-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.267 U	0.267 U	0.267 U	0.267 U	0.534 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.0534 U	0.267 U	1.07 U
B16	D-FD02-102919	15.0-15.5	29-Oct-19	MG/KG	0.26 U	0.26 U	0.26 U	0.26 U	0.52 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.052 U	0.26 U	1.04 U
B16	D-B16-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	0.275 U	0.275 U	0.275 U	0.275 U	0.549 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.0549 U	0.275 U	1.1 U
B16	D-B16-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	0.291 U	0.291 U	0.291 U	0.291 U	0.583 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.0583 U	0.291 U	1.17 U
B17	D-B17-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.27 U	0.27 U	0.27 U	0.27 U	0.54 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.054 U	0.27 U	1.08 U
B19	D-B19-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.262 U	0.262 U	0.262 U	0.262 U	0.524 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.0524 U	0.262 U	1.05 U
B21	D-B21-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.234 U	0.234 U	0.234 U	0.234 U	0.468 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.0468 U	0.234 U	0.936 U
B21	D-FD02-110119	2.5-3.0	01-Nov-19	MG/KG	0.219 U	0.219 U	0.219 U	0.219 U	0.439 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.0439 U	0.219 U	0.877 U
B25	D-B25-0-102719	0-0	27-Oct-19	MG/KG	0.314 U	0.314 U	0.314 U	0.314 U	0.628 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.0628 U	0.314 U	1.26 U
B25	D-B25-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.225 U	0.225 U	0.225 U	0.225 U	0.45 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.045 U	0.225 U	0.901 U
B28	D-B28-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.259 U	0.259 U	0.259 U	0.259 U	0.518 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.0518 U	0.259 U	1.04 U
B28	D-FD03-102919	5.0-5.5	29-Oct-19	MG/KG	0.226 U	0.226 U	0.226 U	0.226 U	0.453 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.0453 U	0.226 U	0.906 U
B29	D-B29-5.0-5.5	5.0-5.5	07-Nov-19	MG/KG	0.245 UJ	0.245 U	0.245 U	0.245 U	0.489 UJ	0.245 U	0.245 U	0.245 U	0.245 U	0.245 UJ	0.245 U	0.245 U	0.245 U	0.245 U	0.0489 U	0.245 U	0.978 UJ
B30	D-B30-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.213 U	0.213 U	0.213 U	0.213 U	0.427 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.0427 U	0.213 U	0.853 U
B30	D-FD01-110119	5.0-5.5	01-Nov-19	MG/KG	0.266 U	0.266 U	0.266 U	0.266 U	0.532 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.0532 U	0.266 U	1.06 U
B35	D-B35-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.324 UJ	0.324 U	0.324 U	0.324 U	0.648 UJ	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.0648 U	0.324 U	1.3 U
TAR	D-TAR-01	--	02-Nov-19	MG/KG	0.502 U	0.502 U	0.502 U	0.502 U	1 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.1 U	0.502 U	2.01 U

Table 2-5. Summary of Analytical Data for Soil VOCs

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Isopropylbenzene	m,p-Xylenes	Methylcyclohexane	Methylene Chloride	MTBE	Naphthalene	n-Butylbenzene	n-Hexane	n-Propylbenzene	o-Xylene	p-Cymene (p-Isopropyltoluene)	Propene	Sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethylene	Toluene
Residential Soil Remediation Level				MG/KG	**92**	**NE**	**230**	**9.3**	**32**	**56**	**240**	**110**	**240**	**NE**	**NE**	**NE**	**220**	**1500**	**390**	**0.51**	**650**
Non-Residential Soil Remediation Level				MG/KG	**92**	**NE**	**230**	**210**	**710**	**190**	**240**	**110**	**240**	**NE**	**NE**	**NE**	**220**	**1500**	**390**	**13**	**650**
Groundwater Protection Level				MG/KG	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**45**	**NE**	**0.80**	**159**
B11	D-B11-1.0-1.5	1.0-1.5	30-Oct-19	MG/KG	0.263 U	0.105 U	0.526 U	1.05 U	0.263 U	0.526 U	0.263 U	0.526 U	0.263 U	0.0526 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U	0.263 U
B11	D-B11-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.265 U	0.106 U	0.531 U	1.06 U	0.265 U	0.531 U	0.265 U	0.531 U	0.265 U	0.0531 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U	0.265 U
B12	D-B12-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.253 U	0.101 U	0.506 U	1.01 U	0.253 U	0.506 U	0.253 U	0.506 U	0.253 U	0.0506 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U	0.253 U
B12	D-B12-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.22 U	0.0882 U	0.441 U	0.882 U	0.22 U	0.441 U	0.22 U	0.441 U	0.22 U	0.0441 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
B12	D-B12-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	0.21 U	0.0839 U	0.419 U	0.839 U	0.21 U	0.419 U	0.21 U	0.419 U	0.21 U	0.0419 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
B12	D-FD02-103119	5.0-5.5	31-Oct-19	MG/KG	0.214 U	0.0856 U	0.428 U	0.856 U	0.214 U	0.428 U	0.214 U	0.428 U	0.214 U	0.0428 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U	0.214 U
B13	D-B13-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.289 U	**0.197**	0.577 U	1.15 U	0.289 U	**28.3**	0.289 U	0.577 U	0.289 U	**0.133**	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	0.289 U	**0.38**
B13	D-B13-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.243 U	0.0971 U	0.485 U	0.971 U	0.243 U	**10.5**	0.243 U	0.485 U	0.243 U	0.0485 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U
B14	D-B14-1.0-1.5	1.0-1.5	29-Oct-19	MG/KG	0.268 U	0.107 U	0.535 U	1.07 U	0.268 U	0.535 U	0.268 U	0.535 U	0.268 U	0.0535 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U
B15	D-B15-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.247 U	0.0988 U	0.494 U	0.988 U	0.247 U	0.494 U	0.247 U	0.494 U	0.247 U	0.0494 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U	0.247 U
B15	D-FD03-110119	5.0-5.5	01-Nov-19	MG/KG	0.249 U	0.0996 U	0.498 U	0.996 U	0.249 U	0.498 U	0.249 U	0.498 U	0.249 U	0.0498 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U
B16	D-B16-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	0.268 U	0.107 U	0.535 U	1.07 U	0.268 U	0.535 U	0.268 U	0.535 U	0.268 U	0.0535 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U	0.268 U
B16	D-FD01-102919	2.5-3.0	29-Oct-19	MG/KG	0.249 U	0.0996 U	0.498 U	0.996 U	0.249 U	0.498 U	0.249 U	0.498 U	0.249 U	0.0498 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U	0.249 U
B16	D-B16-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.296 U	0.118 U	0.591 U	1.18 U	0.296 U	0.591 U	0.296 U	0.591 U	0.296 U	0.0591 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U
B16	D-B16-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.296 U	0.118 U	0.592 U	1.18 U	0.296 U	0.592 U	0.296 U	0.592 U	0.296 U	0.0592 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U	0.296 U
B16	D-B16-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.267 U	0.107 U	0.534 U	1.07 U	0.267 U	0.534 U	0.267 U	0.534 U	0.267 U	0.0534 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U	0.267 U
B16	D-FD02-102919	15.0-15.5	29-Oct-19	MG/KG	0.26 U	0.104 U	0.52 U	1.04 U	0.26 U	0.52 U	0.26 U	0.52 U	0.26 U	0.052 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
B16	D-B16-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	0.275 U	0.11 U	0.549 U	1.1 U	0.275 U	0.549 U	0.275 U	0.549 U	0.275 U	0.0549 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U	0.275 U
B16	D-B16-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	0.291 U	0.117 U	0.583 U	1.17 U	0.291 U	0.583 U	0.291 U	0.583 U	0.291 U	0.0583 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U	0.291 U
B17	D-B17-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.27 U	0.108 U	0.54 U	1.08 U	0.27 U	0.54 U	0.27 U	0.54 U	0.27 U	0.054 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
B19	D-B19-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.262 U	0.105 U	0.524 U	1.05 U	0.262 U	0.524 U	0.262 U	0.524 U	0.262 U	0.0524 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U	0.262 U
B21	D-B21-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.234 U	0.0936 U	0.468 U	0.936 U	0.234 U	0.468 U	0.234 U	0.468 U	0.234 U	0.0468 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U	0.234 U
B21	D-FD02-110119	2.5-3.0	01-Nov-19	MG/KG	0.219 U	0.0877 U	0.439 U	0.877 U	0.219 U	0.439 U	0.219 U	0.439 U	0.219 U	0.0439 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U	0.219 U
B25	D-B25-0-102719	0-0	27-Oct-19	MG/KG	0.314 U	0.126 U	0.628 U	1.26 U	0.314 U	0.628 U	0.314 U	0.628 U	0.314 U	0.0628 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U	0.314 U
B25	D-B25-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.225 U	0.0901 U	0.45 U	0.901 U	0.225 U	0.45 U	0.225 U	0.45 U	0.225 U	0.045 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U	0.225 U
B28	D-B28-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.259 U	0.104 U	0.518 U	1.04 U	0.259 U	0.518 U	0.259 U	0.518 U	0.259 U	0.0518 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U
B28	D-FD03-102919	5.0-5.5	29-Oct-19	MG/KG	0.226 U	0.0906 U	0.453 U	0.906 U	0.226 U	0.453 U	0.226 U	0.453 U	0.226 U	0.0453 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U	0.226 U
B29	D-B29-5.0-5.5	5.0-5.5	07-Nov-19	MG/KG	0.245 U	0.0978 U	0.489 U	0.978 U	0.245 U	0.489 U	0.245 U	0.489 UJ	0.245 U	0.0489 U	0.245 U	0.245 UJ	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
B30	D-B30-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.213 U	0.0853 U	0.427 U	0.853 U	0.213 U	0.427 U	0.213 U	0.427 U	0.213 U	0.0427 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U	0.213 U
B30	D-FD01-110119	5.0-5.5	01-Nov-19	MG/KG	0.266 U	0.106 U	0.532 U	1.06 U	0.266 U	0.532 U	0.266 U	0.532 U	0.266 U	0.0532 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U	0.266 U
B35	D-B35-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.324 U	0.13 U	0.648 U	1.3 U	0.324 U	0.648 U	0.324 U	0.648 U	0.324 U	0.0648 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U	0.324 U
TAR	D-TAR-01	--	02-Nov-19	MG/KG	0.502 U	0.201 U	1 U	2.01 U	0.502 U	1 U	0.502 U	1 U	0.502 U	0.1 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U	0.502 U

Table 2-5. Summary of Analytical Data for Soil VOCs
APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Total Xylenes	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl Acetate	Vinyl Chloride
Residential Soil Remediation Level				MG/KG	**270**	**69**	**NE**	**3**	**390**	**NE**	**0.085**
Non-Residential Soil Remediation Level				MG/KG	**420**	**230**	**NE**	**65**	**1300**	**NE**	**0.75**
Groundwater Protection Level				MG/KG	**31**	**9.20**	**NE**	**0.76**	**NE**	**NE**	**NE**
B11	D-B11-1.0-1.5	1.0-1.5	30-Oct-19	MG/KG	0.0526 U	0.263 U	0.263 U	0.263 U	0.263 U	0.0526 U	0.263 U
B11	D-B11-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.0531 U	0.265 U	0.265 U	0.265 U	0.265 U	0.0531 U	0.265 U
B12	D-B12-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	0.0506 U	0.253 U	0.253 U	0.253 U	0.253 U	0.0506 U	0.253 U
B12	D-B12-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.0441 U	0.22 U	0.22 U	0.22 U	0.22 U	0.0441 U	0.22 U
B12	D-B12-5.0-5.5	5.0-5.5	31-Oct-19	MG/KG	0.0419 U	0.21 U	0.21 U	0.21 U	0.21 U	0.0419 U	0.21 U
B12	D-FD02-103119	5.0-5.5	31-Oct-19	MG/KG	0.0428 U	0.214 U	0.214 U	0.214 U	0.214 U	0.0428 U	0.214 U
B13	D-B13-1.0-1.5	1.0-1.5	31-Oct-19	MG/KG	**0.33**	0.289 U	0.289 U	0.289 U	0.289 U	0.577 U	0.289 U
B13	D-B13-2.5-3.0	2.5-3.0	31-Oct-19	MG/KG	0.0485 U	0.243 U	0.243 U	0.243 U	0.243 U	0.0485 U	0.243 U
B14	D-B14-1.0-1.5	1.0-1.5	29-Oct-19	MG/KG	0.0535 U	0.268 U	0.268 U	0.268 U	0.268 U	0.535 U	0.268 U
B15	D-B15-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.0494 U	0.247 U	0.247 U	0.247 U	0.247 U	0.0494 U	0.247 U
B15	D-FD03-110119	5.0-5.5	01-Nov-19	MG/KG	0.0498 U	0.249 U	0.249 U	0.249 U	0.249 U	0.0498 U	0.249 U
B16	D-B16-2.5-3.0	2.5-3.0	29-Oct-19	MG/KG	0.0535 U	0.268 U	0.268 U	0.268 U	0.268 U	0.535 U	0.268 U
B16	D-FD01-102919	2.5-3.0	29-Oct-19	MG/KG	0.0498 U	0.249 U	0.249 U	0.249 U	0.249 U	0.498 U	0.249 U
B16	D-B16-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.0591 U	0.296 U	0.296 U	0.296 U	0.296 U	0.591 U	0.296 U
B16	D-B16-10.0-10.5	10.0-10.5	29-Oct-19	MG/KG	0.0592 U	0.296 U	0.296 U	0.296 U	0.296 U	0.0592 U	0.296 U
B16	D-B16-15.0-15.5	15.0-15.5	29-Oct-19	MG/KG	0.0534 U	0.267 U	0.267 U	0.267 U	0.267 U	0.0534 U	0.267 U
B16	D-FD02-102919	15.0-15.5	29-Oct-19	MG/KG	0.052 U	0.26 U	0.26 U	0.26 U	0.26 U	0.052 U	0.26 U
B16	D-B16-19.5-20.0	19.5-20.0	29-Oct-19	MG/KG	0.0549 U	0.275 U	0.275 U	0.275 U	0.275 U	0.0549 U	0.275 U
B16	D-B16-7.5-8.0	7.5-8.0	29-Oct-19	MG/KG	0.0583 U	0.291 U	0.291 U	0.291 U	0.291 U	0.0583 U	0.291 U
B17	D-B17-5.0-5.5	5.0-5.5	30-Oct-19	MG/KG	0.054 U	0.27 U	0.27 U	0.27 U	0.27 U	0.054 U	0.27 U
B19	D-B19-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.0524 U	0.262 U	0.262 U	0.262 U	0.262 U	0.0524 U	0.262 U
B21	D-B21-2.5-3.0	2.5-3.0	01-Nov-19	MG/KG	0.0468 U	0.234 U	0.234 U	0.234 U	0.234 U	0.0468 U	0.234 U
B21	D-FD02-110119	2.5-3.0	01-Nov-19	MG/KG	0.0439 U	0.219 U	0.219 U	0.219 U	0.219 U	0.0439 U	0.219 U
B25	D-B25-0-102719	0-0	27-Oct-19	MG/KG	0.0628 U	0.314 U	0.314 U	0.314 U	0.314 U	0.628 U	0.314 U
B25	D-B25-2.5-3.0	2.5-3.0	30-Oct-19	MG/KG	0.045 U	0.225 U	0.225 U	0.225 U	0.225 U	0.045 U	0.225 U
B28	D-B28-5.0-5.5	5.0-5.5	29-Oct-19	MG/KG	0.0518 U	0.259 U	0.259 U	0.259 U	0.259 U	0.0518 U	0.259 U
B28	D-FD03-102919	5.0-5.5	29-Oct-19	MG/KG	0.0453 U	0.226 U	0.226 U	0.226 U	0.226 U	0.0453 U	0.226 U
B29	D-B29-5.0-5.5	5.0-5.5	07-Nov-19	MG/KG	0.0489 U	0.245 U	0.245 U	0.245 U	0.245 UJ	0.0489 U	0.245 U
B30	D-B30-5.0-5.5	5.0-5.5	01-Nov-19	MG/KG	0.0427 U	0.213 U	0.213 U	0.213 U	0.213 U	0.0427 U	0.213 U
B30	D-FD01-110119	5.0-5.5	01-Nov-19	MG/KG	0.0532 U	0.266 U	0.266 U	0.266 U	0.266 U	0.0532 U	0.266 U
B35	D-B35-5.0-5.5	5.0-5.5	28-Oct-19	MG/KG	0.0648 U	0.324 U	0.324 U	0.324 U	0.324 U	0.648 U	0.324 U
TAR	D-TAR-01	--	02-Nov-19	MG/KG	0.1 U	0.502 U	0.502 U	0.502 U	0.502 U	0.1 U	0.502 U

Notes:
Cells highlighted in red indicate the compound exceeded the Residential and Non-Residential Soil Remediation Level.
Cells highlighted in yellow indicate that the compound exceeded the Residential Soil Remediation Level only.
Detected results are shown in **Bold**.
J = Analyte is present but the reported value might not be accurate or precise (estimate).
U = Analyte was not detected at the specified detection limit.
UJ = Analyte was not detected at the specified detection limit, detection limit is estimated.
ft bgs = foot (feet) below ground surface
ID = identification number
mg/kg = milligram(s) per kilogram
Groundwater Protection Levels are the minimum values from ADEQ (2013)

Table 2-6. Summary of Analytical Data for Groundwater PAHs
APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene
Aquifer Water Quality Standard				**mg/L**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.0002**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
D-MW25	D-MW25	26-27	07-Nov-19	mg/L	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000388 U	0.000194 U	0.000194 U
D-MW26	D-MW26	28-29	07-Nov-19	mg/L	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000187 U	0.000373 U	0.000187 U	0.000187 U
D-MW27	D-MW27	29-30	07-Nov-19	mg/L	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000196 U	0.000391 U	0.000196 U	0.000196 U
D-MW27	D-FD01-110719	29-30	07-Nov-19	mg/L	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000194 U	0.000388 U	0.000194 U	0.000194 U

Notes:
Detected results are shown in **Bold**.
U = Analyte was not detected at the specified detection limit.
ft bgs = foot (feet) below ground surface
ID = identification number
mg/L = milligram(s) per liter
NE = not established

Table 2-7. Summary of Analytical Data for Groundwater Metals

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium
Aquifer Water Quality Standard				**mg/L**	**0.006**	**0.05**	**2**	**0.004**	**0.005**	**0.1**	**NE**	**NE**	**0.05**	**NE**	**0.002**	**NE**	**0.1**	**0.05**	**NE**	**0.002**
D-MW25	D-MW25	26-27	07-Nov-19	mg/L	0.002 U	**0.00466**	**0.0435**	0.002 U	0.002 U	0.004 U	0.002 U	0.004 U	0.002 U	**0.0536**	0.0000263 U	**0.00275**	0.002 U	**0.00498**	0.002 U	0.002 U
D-MW26	D-MW26	28-29	07-Nov-19	mg/L	0.002 U	**0.0068**	**0.0431**	0.002 U	0.002 U	0.004 U	0.002 U	0.004 U	0.002 U	**0.0569**	0.0000263 U	0.002 U	0.002 U	**0.00867**	0.002 U	0.002 U
D-MW27	D-MW27	29-30	07-Nov-19	mg/L	0.002 U	**0.00496**	**0.051**	0.002 U	0.002 U	0.004 U	0.002 U	**0.00409**	0.002 U	**0.361**	0.0000263 U	**0.00293**	**0.00317**	**0.0112**	0.002 U	0.002 U
D-MW27	D-FD01-110719	29-30	07-Nov-19	mg/L	0.002 U	**0.00574**	**0.0557**	0.002 U	0.002 U	0.004 U	0.002 U	**0.00488**	0.002 U	**0.367**	0.0000263 U	**0.00311**	**0.00367**	**0.0115**	0.002 U	0.002 U

Notes:
Detected results are shown in **Bold**.
U = Analyte was not detected at the specified detection limit.
ft bgs = foot (feet) below ground surface
ID = identification number
mg/L = milligram(s) per liter
NE = not established

Table 2-8. Summary of Analytical Data for Groundwater VOCs

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane
Aquifer Water Quality Standard				**mg/L**	**NE**	**0.2**	**NE**	**0.005**	**NE**	**0.007**	**NE**	**NE**	**NE**	**0.07**	**NE**	**0.0002**	**0.00005**	**0.6**	**0.005**
D-MW25	D-MW25	26-27	07-Nov-19	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.005 U	0.001 U	0.005 U	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U
D-MW26	D-MW26	28-29	07-Nov-19	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	**0.00402**	0.005 U	0.005 U	0.001 U	0.005 U	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U
D-MW27	D-MW27	29-30	07-Nov-19	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	**0.00401**	0.005 U	0.005 U	0.001 U	0.005 U	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U
D-MW27	D-FD01-110719	29-30	07-Nov-19	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	**0.00437**	0.005 U	0.005 U	0.001 U	0.005 U	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U

Notes:
Cells highlighted in yellow indicate that the compound exceeded the aquifer water quality standard.
Detected results are shown in **Bold**.
U = Analyte was not detected at the specified detection limit.
UJ = Analyte was not detected at the specified detection limit, detection limit is estimated.
ft bgs = foot (feet) below ground surface
ID = identification number
mg/L = milligram(s) per liter
NE = not established

Table 2-8. Summary of Analytical Data for Groundwater VOCs

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Butadiene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	1-Chlorohexane	2,2-Dichloropropane	2-Chlorotoluene	2-Hexanone	4-Chlorotoluene	4-Methyl-2-Pentanone	Acetone	Benzene	Bromobenzene
Aquifer Water Quality Standard				**mg/L**	**0.005**	**NE**	**NE**	**NE**	**NE**	**0.075**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.005**	**NE**
D-MW25	D-MW25	26-27	07-Nov-19	mg/L	0.005 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.05 U	0.001 U	0.05 U	0.1 U	0.001 U	0.001 U
D-MW26	D-MW26	28-29	07-Nov-19	mg/L	0.005 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.05 U	0.001 U	0.05 U	0.1 U	0.001 U	0.001 U
D-MW27	D-MW27	29-30	07-Nov-19	mg/L	0.005 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.05 U	0.001 U	0.05 U	0.1 UJ	0.001 U	0.001 U
D-MW27	D-FD01-110719	29-30	07-Nov-19	mg/L	0.005 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.05 U	0.001 U	0.05 U	0.1 U	0.001 U	0.001 U

Notes:
Cells highlighted in yellow indicate that the compound exceeded the aquifer water qu
Detected results are shown in **Bold**.
U = Analyte was not detected at the specified detection limit.
UJ = Analyte was not detected at the specified detection limit, detection limit is estim
ft bgs = foot (feet) below ground surface
ID = identification number
mg/L = milligram(s) per liter
NE = not established

Table 2-8. Summary of Analytical Data for Groundwater VOCs

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	cis-1,2-Dichloroethylene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane	Dicyclopentadiene	Ethylbenzene
Aquifer Water Quality Standard				mg/L	NE	NE	NE	NE	0.005	0.1	NE	NE	0.07	NE	NE	NE	NE	NE	0.7
D-MW25	D-MW25	26-27	07-Nov-19	mg/L	0.001 U	0.001 U	0.005 U	0.005 U	0.005 U	0.001 U	0.01 U	0.001 U	0.001 U	0.005 U	0.005 UJ	0.005 U	0.001 U	0.005 U	0.001 U
D-MW26	D-MW26	28-29	07-Nov-19	mg/L	0.001 U	0.001 U	0.005 U	0.005 U	0.005 U	0.001 U	0.01 U	0.001 U	0.001 U	0.005 U	0.005 UJ	0.005 U	0.001 U	0.005 U	0.001 U
D-MW27	D-MW27	29-30	07-Nov-19	mg/L	0.001 U	0.001 U	0.005 U	0.005 U	0.005 U	0.001 U	0.01 U	0.001 U	0.001 U	0.005 U	0.005 UJ	0.005 U	0.001 U	0.005 U	0.001 U
D-MW27	D-FD01-110719	29-30	07-Nov-19	mg/L	0.001 U	0.001 U	0.005 U	0.005 U	0.005 U	0.001 U	0.01 U	0.001 U	0.001 U	0.005 U	0.005 UJ	0.005 U	0.001 U	0.005 U	0.001 U

Notes:
Cells highlighted in yellow indicate that the compound exceeded the aquifer water qu
Detected results are shown in **Bold**.
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UJ = Analyte was not detected at the specified detection limit, detection limit is estim
ft bgs = foot (feet) below ground surface
ID = identification number
mg/L = milligram(s) per liter
NE = not established

Table 2-8. Summary of Analytical Data for Groundwater VOCs

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylenes	Methyl bromide	Methyl Chloride	Methyl ethyl ketone	Methyl iodide	Methylcyclohexane	Methylene Bromide	Methylene Chloride	MTBE	Naphthalene	n-Butylbenzene	n-Hexane	n-Propylbenzene
Aquifer Water Quality Standard				**mg/L**	**NE**	**NE**	**10**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.005**	**NE**	**NE**	**NE**	**NE**	**NE**
D-MW25	D-MW25	26-27	07-Nov-19	mg/L	0.005 U	0.001 U	0.01 U	0.005 U	0.01 U	0.05 U	0.02 U	0.01 U	0.001 U	0.01 U	0.005 U	0.01 U	0.001 U	0.005 U	0.001 U
D-MW26	D-MW26	28-29	07-Nov-19	mg/L	0.005 U	0.001 U	0.01 U	0.005 U	0.01 U	0.05 U	0.02 U	0.01 U	0.001 U	0.01 U	0.005 U	0.01 U	0.001 U	0.005 U	0.001 U
D-MW27	D-MW27	29-30	07-Nov-19	mg/L	0.005 U	0.001 U	0.01 U	0.005 U	0.01 U	0.05 U	0.02 U	0.01 U	0.001 U	0.01 U	0.005 U	0.01 U	0.001 U	0.005 U	0.001 U
D-MW27	D-FD01-110719	29-30	07-Nov-19	mg/L	0.005 U	0.001 U	0.01 U	0.005 U	0.01 U	0.05 U	0.02 U	0.01 U	0.001 U	0.01 U	0.005 U	0.01 U	0.001 U	0.005 U	0.001 U

Notes:
Cells highlighted in yellow indicate that the compound exceeded the aquifer water qu
Detected results are shown in **Bold**.
U = Analyte was not detected at the specified detection limit.
UJ = Analyte was not detected at the specified detection limit, detection limit is estim
ft bgs = foot (feet) below ground surface
ID = identification number
mg/L = milligram(s) per liter
NE = not established

Table 2-8. Summary of Analytical Data for Groundwater VOCs

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Units	o-Xylene	p-Cymene (p-Isopropyltoluene)	Sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Trihalomethanes	Total Xylenes	trans-1,2-dichloroethylene	trans-1,3-dichloropropene	Trichloroethylene	Trichlorofluoromethane	Vinyl Acetate	Vinyl Chloride
Aquifer Water Quality Standard				**mg/L**	**10**	**NE**	**NE**	**0.1**	**NE**	**0.005**	**1**	**NE**	**10**	**0.1**	**NE**	**0.005**	**NE**	**NE**	**0.002**
D-MW25	D-MW25	26-27	07-Nov-19	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00591**	0.001 U	0.001 U	0.001 U	0.005 U	**0.0129**	0.001 U	0.05 U	0.002 U
D-MW26	D-MW26	28-29	07-Nov-19	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00224**	0.001 U	0.001 U	0.001 U	0.005 U	**0.078**	0.001 U	0.05 U	0.002 U
D-MW27	D-MW27	29-30	07-Nov-19	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.0077**	0.001 U	0.001 U	0.001 U	0.005 U	**0.0688**	0.001 U	0.05 U	0.002 U
D-MW27	D-FD01-110719	29-30	07-Nov-19	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00792**	0.001 U	0.001 U	0.001 U	0.005 U	**0.0712**	0.001 U	0.05 U	0.002 U

Notes:
Cells highlighted in yellow indicate that the compound exceeded the aquifer water qu
Detected results are shown in **Bold**.
U = Analyte was not detected at the specified detection limit.
UJ = Analyte was not detected at the specified detection limit, detection limit is estim
ft bgs = foot (feet) below ground surface
ID = identification number
mg/L = milligram(s) per liter
NE = not established

Table 2-9. Summary of Soil Waste Characterization Results – Pre-design Testing Investigation

APS Douglas Former MGP Site, Douglas, Arizona

Sample ID		D-BIN-110719	D-TAR-01	D-B11-1.0-1.5	D-B11-2.5-3.0*	D-B12-1.0-1.5	D-B12-5.0-5.5	D-B12-7.5-8.0*	D-B13-2.5-3.0	D-B14-1.0-1.5	D-B15-5.0-5.5	D-B16-2.5-3.0	D-B17-5.0-5.5	D-B19-2.5-3.0	D-B21-2.5-3.0	D-B25-0-102719	D-B25-2.5-3.0	D-B28-5.0-5.5	D-B29-5.0-5.5	D-B30-5.0-5.5	D-B35-5.0-5.5
Sample Depth (ft bgs)		--	--	1.0-1.5	2.5-3.0	1.0-1.5	5.0-5.5	7.5-8.0	2.5-3.0	1.0-1.5	5.0-5.5	2.5-3.0	5.0-5.5	2.5-3.0	2.5-3.0	0-0.25	2.5-3.0	5.0-5.5	5.0-5.5	5.0-5.5	5.0-5.5
Sample Date		07-Nov-19	02-Nov-19	30-Oct-19	30-Oct-19	31-Oct-19	31-Oct-19	31-Oct-19	31-Oct-19	29-Oct-19	01-Nov-19	29-Oct-19	30-Oct-19	01-Nov-19	01-Nov-19	27-Oct-19	30-Oct-19	29-Oct-19	07-Nov-19	01-Nov-19	28-Oct-19
Analyte	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
General Waste Analyses (SW-1010/9012/9045/9095)																					
pH	SU	**8.02**	--	**7.72**	--	**8.3**	**8.13**	--	**8.84**	**8.03**	**7.91**	**8.56**	**8.48**	**8.32**	**7.95**	**8.38**	**8.44**	**8.31**	**8.42**	**7.91**	**8.12**
Flash Point	DEG F	180>	--	180	--	180	180	--	180	180	180	180	180	180	180	180	180	180	180	180	180
Temperature	DEG C	**25.1**	--	**25.7**	--	**25.1**	**24.3**	--	**24.9**	**22.6**	**25.6**	**22.9**	**25.8**	**25**	**25.1**	**21.6**	**25**	**25.9**	**23**	**25.3**	**23.3**
Paint Filter	Pass/Fail	Pass	--	Pass	--	Pass	Pass	--	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Cyanide, Total	MG/KG	0.0582U	--	**0.65**	--	0.0588U	**0.19**	--	**0.0668J**	0.0554U	0.0601U	**0.144**	**0.204**	0.065U	**0.0715**	**0.0635**	0.0286U	0.0286U	0.0545UJ	0.0565U	0.0588U
PCB (SW8082)																					
PCB-1016	MG/KG	0.0333U	--	0.0333U	--	0.0333U	0.0833U	--	0.0333U	0.0167U	0.00395UJ	0.0166U	0.0833U	0.00396UJ	0.00394UJ	0.0167	0.0167U	0.0166U	**0.0249**	0.00395	0.0167
PCB-1221	MG/KG	0.0333U	--	0.0333U	--	0.0333U	0.0833U	--	0.0333U	0.0167U	0.00395UJ	0.0166U	0.0833U	0.00396UJ	0.00394UJ	0.0167	0.0167U	0.0166U	0.0166U	0.00395	0.0167
PCB-1232	MG/KG	0.0333U	--	0.0333U	--	0.0333U	0.0833U	--	0.0333U	0.0167U	0.00395UJ	0.0166U	0.0833U	0.00396UJ	0.00394UJ	0.0167	0.0167U	0.0166U	0.0166U	0.00395	0.0167
PCB-1242	MG/KG	0.0333U	--	0.0333U	--	0.0333U	0.0833U	--	0.0333U	0.0167U	0.00395UJ	0.0166U	0.0833U	0.00396UJ	0.00394UJ	0.0167	0.0167U	0.0166U	0.0166U	0.00395	0.0167
PCB-1248	MG/KG	0.0333U	--	0.0333U	--	0.0333U	0.0833U	--	0.0333U	0.0167U	0.00395UJ	**0.0284**	0.0833U	0.00396UJ	0.00394UJ	0.0167	0.0167U	0.0166U	0.0166U	0.00395	0.0167
PCB-1254	MG/KG	0.0333U	--	0.0333U	--	0.0333U	0.0833U	--	0.0333U	0.0167U	0.00261UJ	0.0166U	0.0833U	0.00261UJ	0.0026UJ	0.0167	0.0167U	0.0166U	0.0166U	0.00261	0.0167
PCB-1260	MG/KG	0.0333U	--	0.0333U	--	0.0333U	0.0833U	--	0.0333U	0.0167U	0.00261UJ	0.0166U	0.0833U	0.00261UJ	0.0026UJ	0.0167	0.0167U	0.0166U	0.0166U	0.00261	0.0167
Total Metals (SW-6020/7471B)																					
Arsenic	MG/KG	**11.1**	--	**12.9**	**18.9**	**18**	**17.2**	**15.7**	**18.9**	**10.9**	**13.8**	**11.5**	7.44	**13.7**	**12.2**	**10.9**	**14.8**	**16.1**	**15.9J**	**12.6**	**13**
Barium	MG/KG	**129**	--	**125**	**83.3**	**111**	**96**	**122**	**540**	**200**	**160**	**117**	**86.1**	**116**	**120**	**175**	**174**	**84.3**	**178**	**133**	**174**
Cadmium	MG/KG	1.92U	--	1.89U	1.85U	1.96U	1.89U	1.75U	2U	1.85U	1.89U	1.67U	1.96U	1.85U	1.67U	1.92U	1.85U	1.89U	1.85U	1.85U	1.89U
Chromium	MG/KG	**22.4**	--	**11.2**	**16.1**	**10**	**10.6**	**10.8**	**12.9**	**9.32**	**13.2**	**11.1**	**5.51**	**9.86**	**9.99**	**9.85**	**11.9**	**9.3**	**18.1J**	**10.2**	**14.1**
Lead	MG/KG	**27**	--	**93.2**	**420**	**166**	**169**	**531**	**17.9**	**48.7**	**44.7**	**42.5**	**20.3**	**26.1**	**72.8**	**57.5**	**9.12**	**10.9**	**32.8J**	**26.8**	**29.9J**
Selenium	MG/KG	1.92U	--	1.89U	1.85U	1.96U	1.89U	1.75U	2U	1.85U	1.89U	1.67U	1.96U	1.85U	1.67U	1.92U	1.85U	1.89U	1.85U	1.85U	1.89U
Silver	MG/KG	1.92U	--	1.89U	1.85U	1.96U	1.89U	1.75U	2U	1.85U	1.89U	1.67U	1.96U	1.85U	1.67U	1.92U	1.85U	1.89U	1.85UJ	1.85U	1.89U
Mercury	MG/KG	0.0196U	--	**0.0312**	**0.0478**	**0.0302**	**0.0387**	**0.127**	0.0196U	**0.0238**	**0.0391**	**0.0416**	**0.0475**	0.0169U	**0.0532**	**0.0461**	0.0192U	0.0185U	**0.0494**	0.0182UJ	**0.000228**
TCLP Metals (SW6020/7470A_TCLP)																					
Arsenic	MG/L	----	0.02U	--	0.0275U	--	--	0.0275U	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	MG/L	----	**1.35**	--	**0.594**	--	--	**1.17**	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	MG/L	----	0.01U	--	0.0122U	--	--	0.0122U	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	MG/L	----	0.02U	--	0.00405U	--	--	0.00405U	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	MG/L	----	0.01U	--	**0.128**	--	--	**0.92**	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	MG/L	----	0.01U	--	**0.456**	--	--	**0.393**	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	MG/L	----	0.01U	--	0.0279U	--	--	0.0279U	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	MG/L	----	0.0002U	--	0.0000263U	--	--	0.0000263U	--	--	--	--	--	--	--	--	--	--	--	--	--
TCLP VOCs (SW8260C_TCLP)																					
1,1-Dichloroethene	MG/L	----	0.05U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	MG/L	----	0.05U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	MG/L	----	0.05U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	MG/L	----	0.05U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon Tetrachloride	MG/L	----	0.25U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	MG/L	----	0.05U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	MG/L	----	0.05U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone	MG/L	----	2.5U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	MG/L	----	0.05U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichloroethylene	MG/L	----	0.25U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	MG/L	----	0.1U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (SW8270SIM)																					
Acenaphthene	MG/KG	0.00167U	--	0.00833U	**0.0266**	0.0666U	**0.0553J**	0.669U	**0.955**	0.00167U	0.0333U	0.0167U	0.0668U	0.00166U	**0.0521**	0.00832U	0.00167U	0.00167U	0.00167U	0.00833U	0.0167U
Acenaphthylene	MG/KG	**0.00729**	--	**0.212**	**1.14**	**0.471**	**0.847J**	**1.84J**	**10.9**	**0.00704**	**0.051**	**0.112**	**0.414**	**0.00681**	**1.89**	**0.102**	0.00167U	0.00167U	**0.00226**	**0.0154**	0.0167U
Anthracene	MG/KG	**0.00602**	--	**0.0609**	**0.275**	**0.246**	**0.427J**	**0.826J**	**4.88**	**0.0102**	**0.0341**	**0.0737**	**0.0833**	**0.00472**	**1.38**	**0.0934**	0.00167U	**0.00206J**	0.00167U	**0.00931**	0.0167U
Benzo(a)anthracene	MG/KG	**0.021**	--	**0.232**	**1.1**	**0.811**	**1.24J**	**2.79J**	**7.25**	**0.017**	**0.131**	**0.238**	**0.295**	**0.0224**	**6.24**	**0.372**	**0.00274**	**0.0104J**	**0.00661**	**0.0376**	**0.0225**
Benzo(a)pyrene	MG/KG	**0.0337**	--	**0.39**	**1.66**	**1.68**	**2.65J**	**5.93J**	**9.99**	**0.0157**	**0.201**	**0.433**	**0.544**	**0.045**	**11.8**	**0.626**	**0.00357**	**0.0177J**	**0.00983**	**0.0672**	**0.0385**
Benzo(b)fluoranthene	MG/KG	**0.0497**	--	**0.575**	**2.9**	**1.75**	**2.58J**	**6.16J**	**10**	**0.044**	**0.227**	**0.486**	**0.576**	**0.0611**	**12.3**	**0.84**	**0.00531**	**0.0291J**	**0.0122J**	**0.0795**	**0.0501J**
Benzo(g,h,i)perylene	MG/KG	**0.0225**	--	**0.39**	**1.59**	**2.12**	**3.17J**	**7.41J**	**8.37**	**0.00841**	**0.149**	**0.377**	**0.636**	**0.0377**	**9.7**	**0.449**	**0.00299**	**0.0201J**	**0.0102**	**0.0744**	**0.0521**
Benzo(k)fluoranthene	MG/KG	**0.0148**	--	**0.168**	**0.729**	**0.52**	**0.777J**	**2.26J**	**2.73**	**0.0109**	**0.0709**	**0.146**	**0.177**	**0.0185**	**3.69**	**0.223**	0.00167U	**0.00705J**	**0.00358**	**0.0232**	0.0167U
Chrysene	MG/KG	**0.0288**	--	**0.37**	**1.79**	**1.04**	**1.61J**	**3.59J**	**7.71**	**0.0228**	**0.151**	**0.326**	**0.351**	**0.0319**	**8.25**	**0.469**	**0.0032**	**0.0148J**	**0.00777**	**0.0484**	**0.0343J**
Dibenz(a,h)Anthracene	MG/KG	0.00167U	--	0.00833U	0.0167U	0.0666U	0.0334U	0.669U	0.333U	0.00167U	0.0333U	0.0167U	0.0668U	0.00166U	0.0334U	0.00832U	0.00167U	0.00167U	0.00167U	0.00833U	0.0167U
Fluoranthene	MG/KG	**0.0597**	--	**0.759**	**3.32**	**3.68**	**5.61J**	**11.5J**	**28.3**	**0.0393**	**0.42**	**0.743**	**1.09**	**0.0556**	**20.3**	**1.01**	**0.00662**	**0.0261J**	**0.0157**	**0.14**	**0.0622J**
Fluorene	MG/KG	**0.00186**	--	**0.0223**	**0.127**	**0.0716**	**0.134J**	0.669U	**5.82**	0.00167U	0.0333U	**0.0249J**	0.0668U	0.00166U	**0.366**	**0.0145**	0.00167U	0.00167U	0.00167U	0.00833U	0.0167U
Indeno(1,2,3-c,d)Pyrene	MG/KG	**0.0184**	--	**0.317**	**1.37**	**1.44**	**2.16J**	**5.01J**	**6.18**	**0.0081**	**0.116**	**0.263**	**0.451**	**0.0284**	**7.56**	**0.346**	**0.0025**	**0.0158J**	**0.00727**	**0.0536**	**0.0346**
Naphthalene	MG/KG	0.0167U	--	0.0833U	**0.421**	0.666U	**0.775J**	6.69U	**21**	0.0167U	0.333U	0.167UJ	0.668U	0.0166U	**1.65**	0.0832U	0.0167U	0.0167U	0.0167U	0.0833U	0.167U
Phenanthrene	MG/KG	**0.0313**	--	**0.497**	**2.41**	**2.37**	**3.83J**	**7.2J**	**40.1**	**0.00637**	**0.298**	**0.526**	**0.808**	**0.0195**	**8.9**	**0.493**	**0.00288**	**0.011J**	**0.012**	**0.1**	**0.0182**
Pyrene	MG/KG	**0.0716**	--	**0.759**	**3.2**	**4.4**	**6.53J**	**14.2J**	**33.8**	**0.0451**	**0.533**	**0.917**	**1.32**	**0.0644**	**25.7**	**1.23**	**0.00658**	**0.0216**	**0.0211J**	**0.172**	**0.0733J**

Table 2-9. Summary of Soil Waste Characterization Results – Pre-design Testing Investigation

APS Douglas Former MGP Site, Douglas, Arizona

	Sample ID	D-BIN-110719	D-TAR-01	D-B11-1.0-1.5	D-B11-2.5-3.0*	D-B12-1.0-1.5	D-B12-5.0-5.5	D-B12-7.5-8.0*	D-B13-2.5-3.0	D-B14-1.0-1.5	D-B15-5.0-5.5	D-B16-2.5-3.0	D-B17-5.0-5.5	D-B19-2.5-3.0	D-B21-2.5-3.0	D-B25-0-102719	D-B25-2.5-3.0	D-B28-5.0-5.5	D-B29-5.0-5.5	D-B30-5.0-5.5	D-B35-5.0-5.5
	Sample Depth (ft bgs)	--	--	1.0-1.5	2.5-3.0	1.0-1.5	5.0-5.5	7.5-8.0	2.5-3.0	1.0-1.5	5.0-5.5	2.5-3.0	5.0-5.5	2.5-3.0	2.5-3.0	0-0.25	2.5-3.0	5.0-5.5	5.0-5.5	5.0-5.5	5.0-5.5
	Sample Date	07-Nov-19	02-Nov-19	30-Oct-19	30-Oct-19	31-Oct-19	31-Oct-19	31-Oct-19	31-Oct-19	29-Oct-19	01-Nov-19	29-Oct-19	30-Oct-19	01-Nov-19	01-Nov-19	27-Oct-19	30-Oct-19	29-Oct-19	07-Nov-19	01-Nov-19	28-Oct-19
Analyte	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (SW8260C)																					
1,1,1,2-Tetrachloroethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,1,1-Trichloroethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245UJ	0.213U	0.324U
1,1,2,2-Tetrachloroethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,1,2-Trichloroethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,1-Dichloroethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,1-Dichloroethene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,1-Dichloropropene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2,3-Trichlorobenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2,3-Trichloropropane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2,4-Trichlorobenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2,4-Trimethylbenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2-Dibromo-3-Chloropropane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2-Dibromoethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2-Dichlorobenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2-Dichloroethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,2-Dichloropropane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,3,5-Trimethylbenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,3-Butadiene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,3-Dichlorobenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,3-Dichloropropane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
1,4-Dichlorobenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
2,2-Dichloropropane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
2-Butanone	MG/KG	1.06U	--	1.05U	1.06U	1.01U	0.839U	--	0.971UJ	1.07U	0.988U	1.07U	1.08U	1.05U	0.936U	1.26U	0.901U	1.04U	0.978UJ	0.853U	1.3U
2-Chlorotoluene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
2-Hexanone	MG/KG	2.65U	--	2.63U	2.65U	2.53U	2.1U	--	2.43U	2.68U	2.47U	2.68U	2.7U	2.62U	2.34U	3.14U	2.25U	2.59U	2.45U	2.13U	3.24U
4-Chlorotoluene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
4-Ethyltoluene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
4-Methyl-2-Pentanone	MG/KG	2.65U	--	2.63U	2.65U	2.53U	2.1U	--	2.43U	2.68U	2.47U	2.68U	2.7U	2.62U	2.34U	3.14U	2.25U	2.59U	2.45U	2.13U	3.24U
Acetone	MG/KG	5.3U	--	5.26U	5.31U	5.06U	4.19U	--	4.85U	5.35U	4.94U	5.35U	5.4U	5.24U	4.68U	6.28U	4.5U	5.18U	4.89UJ	4.27U	6.48U
Benzene	MG/KG	0.053U	--	0.0526U	0.0531U	0.0506U	0.0419U	--	0.0485U	0.0535U	0.0494U	0.0535U	0.054U	0.0524U	0.0468U	0.0628U	0.045U	0.0518U	0.0489U	0.0427U	0.0648U
Bromobenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Bromochloromethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Bromodichloromethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Bromoform	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324UJ
Bromomethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243UJ	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245UJ	0.213U	0.324UJ
Carbon Disulfide	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Carbon Tetrachloride	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Chlorobenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Chloroethane	MG/KG	0.53U	--	0.526U	0.531U	0.506U	0.419U	--	0.485UJ	0.535U	0.494U	0.535U	0.54U	0.524U	0.468U	0.628U	0.45U	0.518U	0.489UJ	0.427U	0.648UJ
Chloroform	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Chloromethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
cis-1,2-Dichloroethene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
cis-1,3-Dichloropropene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Cyclohexane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245UJ	0.213U	0.324U
Dibromochloromethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Dibromomethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Dichlorodifluoromethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Dicyclopentadiene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Ethylbenzene	MG/KG	0.053U	--	0.0526U	0.0531U	0.0506U	0.0419U	--	0.0485U	0.0535U	0.0494U	0.0535U	0.054U	0.0524U	0.0468U	0.0628U	0.045U	0.0518U	0.0489U	0.0427U	0.0648U
Hexachlorobutadiene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Iodomethane (Methyl Iodide)	MG/KG	1.06U	--	1.05U	1.06U	1.01U	0.839U	--	0.971U	1.07U	0.988U	1.07U	1.08U	1.05U	0.936U	1.26U	0.901U	1.04U	0.978UJ	0.853U	1.3U
Isopropylbenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
m,p-Xylenes	MG/KG	0.106U	--	0.105U	0.106U	0.101U	0.0839U	--	0.0971U	0.107U	0.0988U	0.107U	0.108U	0.105U	0.0936U	0.126U	0.0901U	0.104U	0.0978U	0.0853U	0.13U
Methylcyclohexane	MG/KG	0.53U	--	0.526U	0.531U	0.506U	0.419U	--	0.485U	0.535U	0.494U	0.535U	0.54U	0.524U	0.468U	0.628U	0.45U	0.518U	0.489U	0.427U	0.648U
Methylene Chloride	MG/KG	1.06U	--	1.05U	1.06U	1.01U	0.839U	--	0.971U	1.07U	0.988U	1.07U	1.08U	1.05U	0.936U	1.26U	0.901U	1.04U	0.978U	0.853U	1.3U
MTBE	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Naphthalene	MG/KG	0.53U	--	0.526U	0.531U	0.506U	0.419U	--	**10.5**	0.535U	0.494U	0.535U	0.54U	0.524U	0.468U	0.628U	0.45U	0.518U	0.489U	0.427U	0.648U
n-Butylbenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
n-Hexane	MG/KG	0.53U	--	0.526U	0.531U	0.506U	0.419U	--	0.485U	0.535U	0.494U	0.535U	0.54U	0.524U	0.468U	0.628U	0.45U	0.518U	0.489UJ	0.427U	0.648U
n-Propylbenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
o-Xylene	MG/KG	0.053U	--	0.0526U	0.0531U	0.0506U	0.0419U	--	0.0485U	0.0535U	0.0494U	0.0535U	0.054U	0.0524U	0.0468U	0.0628U	0.045U	0.0518U	0.0489U	0.0427U	0.0648U
p-Cymene (p-Isopropyltoluene)	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Propene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245UJ	0.213U	0.324U
Sec-Butylbenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Styrene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
tert-Butylbenzene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Tetrachloroethylene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Toluene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Total Xylenes	MG/KG	0.053U	--	0.0526U	0.0531U	0.0506U	0.0419U	--	0.0485U	0.0535U	0.0494U	0.0535U	0.054U	0.0524U	0.0468U	0.0628U	0.045U	0.0518U	0.0489U	0.0427U	0.0648U
trans-1,2-dichloroethene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
trans-1,3-dichloropropene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Trichloroethene	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U
Trichlorofluoromethane	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245UJ	0.213U	0.324U

Table 2-9. Summary of Soil Waste Characterization Results – Pre-design Testing Investigation

APS Douglas Former MGP Site, Douglas, Arizona

Sample ID		D-BIN-110719	D-TAR-01	D-B11-1.0-1.5	D-B11-2.5-3.0*	D-B12-1.0-1.5	D-B12-5.0-5.5	D-B12-7.5-8.0*	D-B13-2.5-3.0	D-B14-1.0-1.5	D-B15-5.0-5.5	D-B16-2.5-3.0	D-B17-5.0-5.5	D-B19-2.5-3.0	D-B21-2.5-3.0	D-B25-0-102719	D-B25-2.5-3.0	D-B28-5.0-5.5	D-B29-5.0-5.5	D-B30-5.0-5.5	D-B35-5.0-5.5
Sample Depth (ft bgs)		--	--	1.0-1.5	2.5-3.0	1.0-1.5	5.0-5.5	7.5-8.0	2.5-3.0	1.0-1.5	5.0-5.5	2.5-3.0	5.0-5.5	2.5-3.0	2.5-3.0	0-0.25	2.5-3.0	5.0-5.5	5.0-5.5	5.0-5.5	5.0-5.5
Sample Date		07-Nov-19	02-Nov-19	30-Oct-19	30-Oct-19	31-Oct-19	31-Oct-19	31-Oct-19	31-Oct-19	29-Oct-19	01-Nov-19	29-Oct-19	30-Oct-19	01-Nov-19	01-Nov-19	27-Oct-19	30-Oct-19	29-Oct-19	07-Nov-19	01-Nov-19	28-Oct-19
Analyte	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Vinyl Acetate	MG/KG	0.53U	--	0.526U	0.531U	0.506U	0.419U	--	0.485U	0.535U	0.494U	0.535U	0.54U	0.524U	0.468U	0.628U	0.45U	0.518U	0.489U	0.427U	0.648U
Vinyl Chloride	MG/KG	0.265U	--	0.263U	0.265U	0.253U	0.21U	--	0.243U	0.268U	0.247U	0.268U	0.27U	0.262U	0.234U	0.314U	0.225U	0.259U	0.245U	0.213U	0.324U

Notes:

Detected results are shown in **Bold**.

Cells highlighted in yellow indicate that the compound exceeded the Residential Soil Remediation Level only.

Cells highlighted in red indicate that the compound exceeded the Non-residential Soil Remediation Level only.

J = Analyte is present but the reported value might not be accurate or precise (estimate).

U = Analyte was not detected at the specified detection limit.

UJ = Analyte was not detected at the specified detection limit, detection limit is estimated.

ft bgs = foot (feet) below ground surface

ID = identification number

mg/kg = milligram(s) per kilogram

mg/L = milligram(s) per liter

* = Locations added to waste characterization results due to total lead results above the residential SRL of 400 mg/kg; all TCLP results were below the toxicity characteristics.

PCB = polychlorinated biphenyl

TCLP = toxicity characteristic leaching procedure

VOC = volatile organic hydrocarbon

PAH = polynuclear aromatic hydrocarbon

Table 2-10. Summary of Water Waste Characterization Results – Pre-design Testing Investigation

APS Douglas Former MGP Site, Douglas, Arizona

	Sample ID	D-TOTE-110719
	Sample Date	07-Nov-19
Analyte	Units	Result
General Waste Analyses (SW-1010/9012/9045/9095)		
pH	SU	**7.94**
Flash Point	DEG F	180>
Temperature	DEG C	**23.6**
Cyanide, Total	MG/L	0.005U
PCB (SW8082)		
PCB-1016	MG/L	0.0005U
PCB-1221	MG/L	0.0005U
PCB-1232	MG/L	0.0005U
PCB-1242	MG/L	0.0005U
PCB-1248	MG/L	0.0005U
PCB-1254	MG/L	0.0005U
PCB-1260	MG/L	0.0005U
Total Metals (E200.8/SW7470A)		
Antimony	MG/L	0.002U
Arsenic	MG/L	**0.00547**
Barium	MG/L	**0.0434**
Beryllium	MG/L	0.002U
Cadmium	MG/L	0.002U
Chromium	MG/L	0.002U
Cobalt	MG/L	0.002U
Copper	MG/L	0.002U
Lead	MG/L	0.002U
Manganese	MG/L	**0.0655**
Molybdenum	MG/L	**0.00428**
Nickel	MG/L	**0.00255**
Selenium	MG/L	**0.0105**
Silver	MG/L	0.002U
Thallium	MG/L	0.002U
Mercury	MG/L	0.0002U
PAHs (SW8270D)		
1-Methylnaphthalene	MG/L	0.000189U
2-Methylnaphthalene	MG/L	0.000189U
Acenaphthene	MG/L	0.000189U
Acenaphthylene	MG/L	0.000189U
Anthracene	MG/L	0.000189U
Benzo(a)anthracene	MG/L	0.000189U
Benzo(a)pyrene	MG/L	0.000189U
Benzo(b)fluoranthene	MG/L	0.000189U
Benzo(g,h,i)perylene	MG/L	0.000189U
Benzo(k)fluoranthene	MG/L	0.000189U
Chrysene	MG/L	0.000189U
Dibenz(a,h)anthracene	MG/L	0.000189U
Fluoranthene	MG/L	0.000189U
Fluorene	MG/L	0.000189U
Indeno(1,2,3-c,d)Pyrene	MG/L	0.000189U
Naphthalene	MG/L	0.000379U

Table 2-10. Summary of Water Waste Characterization Results – Pre-design Testing Investigation

APS Douglas Former MGP Site, Douglas, Arizona

	Sample ID	D-TOTE-110719
	Sample Date	07-Nov-19
Analyte	Units	Result
Phenanthrene	MG/L	0.000189U
Pyrene	MG/L	0.000189U
1,1,1,2-Tetrachloroethane	MG/L	0.001U
1,1,1-Trichloroethane	MG/L	0.005U
VOCs (SW8260C)		
Tetrachloroethane	MG/L	0.001U
1,1,2-Trichloroethane	MG/L	0.001U
1,1-Dichloroethane	MG/L	0.001U
1,1-Dichloroethene	MG/L	**0.00173**
1,1-Dichloropropene	MG/L	0.005U
1,2,3-Trichlorobenzene	MG/L	0.005U
1,2,3-Trichloropropane	MG/L	0.001U
1,2,4-Trichlorobenzene	MG/L	0.005U
1,2,4-Trimethylbenzene	MG/L	0.001U
1,2-Dibromo-3-Chloropropane	MG/L	0.001U
1,2-Dibromoethane	MG/L	0.005U
1,2-Dichlorobenzene	MG/L	0.001U
1,2-Dichloroethane	MG/L	0.001U
1,2-Dichloropropane	MG/L	0.005U
1,3,5-Trimethylbenzene	MG/L	0.001U
1,3-Butadiene	MG/L	0.001U
1,3-Dichlorobenzene	MG/L	0.001U
1,3-Dichloropropane	MG/L	0.005U
1,4-Dichlorobenzene	MG/L	0.001U
1-Chlorohexane	MG/L	0.005U
2,2-Dichloropropane	MG/L	0.005U
2-Chlorotoluene	MG/L	0.001U
2-Hexanone	MG/L	0.05U
4-Chlorotoluene	MG/L	0.001U
4-Methyl-2-Pentanone	MG/L	0.05U
Acetone	MG/L	0.1U
Benzene	MG/L	0.001U
Bromobenzene	MG/L	0.001U
Bromochloromethane	MG/L	0.001U
Bromodichloromethane	MG/L	0.001U
Bromoform	MG/L	0.005U
Carbon Disulfide	MG/L	0.005U
Carbon Tetrachloride	MG/L	0.005U
Chlorobenzene	MG/L	0.001U
Chloroethane	MG/L	0.01U
Chloroform	MG/L	0.001U
cis-1,2-Dichloroethylene	MG/L	0.001U
cis-1,3-Dichloropropene	MG/L	0.005U
Cyclohexane	MG/L	0.005U
Dibromochloromethane	MG/L	0.005U
Dichlorodifluoromethane	MG/L	0.001U
Dicyclopentadiene	MG/L	0.005U

Table 2-10. Summary of Water Waste Characterization Results – Pre-design Testing Investigation

APS Douglas Former MGP Site, Douglas, Arizona

	Sample ID	D-TOTE-110719
	Sample Date	07-Nov-19
Analyte	Units	Result
Ethylbenzene	MG/L	0.001U
Hexachlorobutadiene	MG/L	0.005U
Isopropylbenzene	MG/L	0.001U
m,p-Xylenes	MG/L	0.01U
Methyl bromide	MG/L	0.005U
Methyl Chloride	MG/L	0.01U
Methyl ethyl ketone	MG/L	0.05U
Methyl iodide	MG/L	0.02U
Methylcyclohexane	MG/L	0.01U
Methylene Bromide	MG/L	0.001U
Methylene Chloride	MG/L	0.01U
MTBE	MG/L	0.005U
Naphthalene	MG/L	0.01U
n-Butylbenzene	MG/L	0.001U
n-Hexane	MG/L	0.005U
n-Propylbenzene	MG/L	0.001U
o-Xylene	MG/L	0.001U
p-Cymene (p-Isopropyltoluene)	MG/L	0.001U
Sec-Butylbenzene	MG/L	0.001U
Styrene	MG/L	0.001U
tert-Butylbenzene	MG/L	0.001U
Tetrachloroethene	MG/L	0.001U
Toluene	MG/L	**0.00262**
Total Trihalomethanes	MG/L	0.001U
Total Xylenes	MG/L	0.001U
trans-1,2-dichloroethylene	MG/L	0.001U
trans-1,3-dichloropropene	MG/L	0.005U
Trichloroethylene	MG/L	**0.0302**
Trichlorofluoromethane	MG/L	0.001U
Vinyl Acetate	MG/L	0.05U
Vinyl Chloride	MG/L	0.002U

Notes:

Cells highlighted in yellow indicate that the compound exceeded the Residential Soil Remediation Level only.

Detected results are shown in **Bold**.

U = Analyte was not detected at the specified detection limit.

* = Locations added to waste characterization results due to total lead results above the residential SRL of 400 mg/kg; all TCLP results were below the toxicity characteristics.

ft bgs = foot (feet) below ground surface

ID = identification number

mg/L = milligram(s) per liter

PCB = polychlorinated biphenyl

PAH = polynuclear aromatic hydrocarbon

TCLP = toxicity characteristic leaching procedure

VOC = volatile organic compound

Table 5-1. Groundwater Protection Modeling Results for PAHs

APS Douglas Former MGP Site, Douglas, Arizona

Analyte	Calculated GPL (mg/kg)
Acenaphthene	9.03E+04
Acenaphthylene	2.91E+04
Anthracene	7.96E+08
Benzo(a)anthracene	4.85E+25
Benzo(a)pyrene	6.58E+84
Benzo(b)fluoranthene	2.44E+84
Benzo(k)fluoranthene	9.87E+82
Chrysene	8.46E+58
Dibenz(a,h)anthracene	1.23E+251
Fluoranthene	6.67E+12
Fluorene	2.82E+06
Indeno(1,2,3-c,d)pyrene	Not Calculated
Naphthalene	1.13E+02
Pyrene	6.93E+19

Notes:

The minimum GPL for indeno(1,2,3-c,d)pyrene could not be calculated because the estimated maximum soil concentration was too low

Calculated GPLs are based on the 2013 ADEQ GPL model spreadsheet. Calculation Spreadsheets are provided in Appendix K

GPL = groundwater protection level

mg/kg = milligram(s) per kilogram

Table 6-1. MGP Site Remediation: Feasibility Screening Matrix for Soil Remediation Options

APS Douglas Former MGP Site, Douglas, Arizona

Remediation Options	Method Description	Applicability to Douglas MGP Site	Advantages	Limitations
1. No Action	No active remediation activities. Relies on continues existing biological activities	Naturally degrade or degrade very slowly. Will not meet Soil Remediation Levels (SRLs). Does not reduce onsite risk. Does not prevent the potential pathway of contamination from soil to groundwater.	• Low cost	• Would likely require institutional controls that would limit future use of the site. • Would require significant future soil sampling • Would not likely meet regulatory requirements
2. Institutional Controls (ICs)	Administrative land use controls (LUCs), Site access restrictions, and other restrictions to minimize potential exposure from Site contaminants	No – It does not meet SRLs and is not applicable due to 3rd party ownership objection to DEUR.	• Low cost	• Continued monitoring of ICs would be required to verify their continued effectiveness and ensure that the exposure pathways are being controlled. • Difficult to implemented as APS does not control site. • ICs would limit the Cities use of the site.
3. Excavation and Off-Site Removal	Remove and treat excavated impacted soils on site. Treat or dispose of soils on or offsite.	Yes – impacted soil can be removed by excavating a portion of the site.	• Protective of human health and then environment. • Proven technology to address soil contamination • Will meet cleanup objectives, regulatory support • Few limitations on future site use	• Soils that are not feasible for removal (i.e., under structures) will remain in place require future action • Existing onsite utilities need to be maintained during remediation increasing risk from excavation • Excavated soil treatment options are limited to offsite disposal • Very high cost – requires significant excavation system to protect buildings and utilities. Significant disposal and site restoration cost.
4. Containment by Capping and Institutional Controls	Use physical barrier, (i.e. surface cap) to limit exposure to contaminated soils. Capping materials can include geotextiles, soil, asphalt, or other materials. Includes administrative land use controls (LUCs), Site access restrictions, and other restrictions to minimize potential exposure from Site contaminants	No – It does not meet SRLs and is not applicable due to 3rd party ownership objection to DEUR.	• Protective of human health and environment.	• Does not remove the contamination, so that contamination will remain, and potential to be a continuing liability. • Continued monitoring of ICs would be required to verify their continued effectiveness and ensure that the exposure pathways are being controlled. • Difficult to implemented as APS does not control site. • Limits on use of the site would likely not be acceptable to the City
5. In Situ Chemical Oxidization (ISCO)	Mineralizes contaminants in place through the addition of a chemical oxidant such as hydrogen peroxide or sodium persulfate.	Limited – applicable with standard chemical delivery systems since the target soils are unsaturated. Will not be able to Meet SRL's. Will likely not be effective on shallow lampblack materials.	• Should result in destruction of some of the contamination although not effective on near surface lampblack materials.	• Will not meet residential SRLs and RAOs. • Laboratory testing required to determine the required dose and extent of destruction that can be achieved. • Ozone highly corrosive to existing utilities. • Soil vapor extraction required to control and monitor system. Additional permitting required. • Mixing approach is relatively messy. • Cost may be relatively high. • Highly disruptive to site use for an extended period of time.
6. Bioventing	Biological activity would be enhanced through the introduction of atmospheric oxygen.	Limited to the lighter molecular weight poly aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPH).	• Easy to implement. • Relatively low cost. • Minimal disturbance to site during operation	• Will not meet residential SRLs and RAOs. • Not applicable for soils with lampblack • Limited biodegradability of the high molecular weight PAHs. • May take a number of years to complete and would limit Cities use of site during that time..

Table 6-2. MGP Site Remediation: Feasibility Screening Matrix for Treatment Options

APS Douglas Former MGP Site, Douglas, Arizona

Treatment options	Method description	Applicability to APS Douglas MGP	Advantages	Limitations
1. Landfill	Haul excavated soil to landfill for disposal, backfill with imported clean soil	Yes – can landfill special waste at local landfill, high transportation cost	• Can be cost effective if appropriate landfill can be identified	• Non hazardous soil only • Liability tied to landfill • Backfill soil costs
2. Enhanced Bioremediation	Introduce biological nutrients to aid in biological breakdown and treatment of excavated soil	No – not useful for treating lamp black affected soil, and does not work with project timeline and site working area requirements	• Inexpensive treatment • Long history of success with petroleum wastes	• Little control of schedule and endpoint • Requires large off-site area • Produces off-gas odors • Still requires soil disposal and backfill to continue on-site operations
3. On-site Thermal Desorption	Use on-site thermal desorption to treat excavated soil prior to backfill	No – requires mobile source air permit for on-site unit, and large working area for soil handling	• Treatment of soils to Soil Remediation Levels (SRLs) or Groundwater Protection Levels (GPLs) • Proven Technology • No off-site trucking of soils • Can use treated soil for backfill	• Difficult to permit in residential areas • Hazardous waste need to be sent to appropriate landfill for disposal • Large on Site space requirement; public acceptance
4. Off-Site Thermal Desorption Fixed Location	Use off-site thermal desorption to treat excavated soil prior to backfill	No – requires mobile source air permit for either unit at a near-site location or fixed location; no near-site location has been identified at this time, fixed unit in California. The presence of lead in the soil prevents the effectiveness of thermal desorption.	• Treatment of soils to SRLs or GPLs • Proven Technology • Can use treated soil for backfill	• Requires trucking to and from location • More costly than landfill disposal because of costs • Hazardous waste needs to be sent to appropriate facility for treatment

Table 7-1. Compounds Evaluated Against Screening Criteria

APS Former Douglas MGP Site, Douglas, Arizona

Evaluated Compounds[1]	SRLs[1,2]		HHRA[3,4]		GPL[5]	Site COCs[6]
	Residential SRL COC	Non-residential SRL COC	HHRA COPC	HHRA COC		
PAHs						
Acenaphthene			√		√	
Acenaphthylene			√		√	
Anthracene			√		√	
Benzo(a)anthracene	√	√	√		√	√
Benzo(a)pyrene	√	√	√	√	√	√
Benzo(b)fluoranthene	√	√	√		√	√
Benzo(k)fluoranthene	√		√		√	√
Benzo(g,h,i)perylene			√			
Chrysene			√		√	√
Dibenz(a,h)anthracene	√	√	√		√	√
Fluoranthene			√		√	
Fluorene			√		√	
Indeno(1,2,3-c,d)pyrene	√	√	√		√	√
Phenanthrene			√			
Pyrene			√		√	
Naphthalene			√	√	√	√
VOCs/SVOCs						
Benzene			√			
Toluene			√			
Xylenes			√			
Naphthalene			√			
Metals and Cyanide						
Arsenic	√[7]	√	√			
Barium			√			
Cadmium			√			
Chromium			√			
Cyanide			√			
Lead	√[8]		√		√	√
Mercury			√			

Notes:

[1] Residential SRL COC - A compound that exceeded the residential SRL. Source: https://apps.azsos.gov/public_services/Title_18/18-07.pdf

[2] Non-residential SRL COC - A compound that exceeded the non-residential SRL. Source: https://apps.azsos.gov/public_services/Title_18/18-07.pdf

[3] Human Health Risk Assessment:

HHRA COPC - Compounds selected for quantitative risk estimate calculations based on the available sampling results obtained from the current site investigation. All detected compounds were considered to be COPCs and were further evaluated.

HHRA COC - The HHRA COPCs that were determined to contribute to the majority of the risk and hazard estimates or result in individual cancer risk estimates above 1 x 10-5 or an hazard estimate greater than 1

[4] Benzo(a)pyrene toxicity equivalanet (BAP-TEQ) was also identified as an HHRA COC. Residential SRLs for individual compounds included in the BAP-TEQ were identifed as individual COCs, so BAP-TEQ is not listed in the table.

[5] GPL development was conducted using the ADEQ GPL model spreadsheet (ADEQ, 2013).

[6] Site COCs are compounds that are MGP-related compounds identified as an SRL or a HHRA COC.

[7] Arsenic is not considered a COC based on results of the background arsenic concentration analysis.

[8] Lead is a COC in the excavation areas (DU-1 and DU-3) located at the former gas holders

Table 7-2. Applicable Site Cleanup Criteria for COCs

APS Douglas Former MGP Site, Douglas, Arizona

Compound	Residential SRL (mg/kg)			Non-Residential SRL (mg/kg)
	Carcinogen			
	10E-6 Risk[1]	10E-5 Risk	Non-Carcinogen	
PAH				
Benzo(a)anthracene	0.69	6.9	---	21
Benzo(a)pyrene	0.069	0.69	---	2.1
Benzo(b)fluoranthene	0.69	6.9	---	21
Benzo(k)fluoranthene	6.9	69	---	210
Chrysene	68	680		2,000
Dibenz(a,h)anthracene	0.069	0.69	---	2.1
Indeno(1,2,3-c,d)pyrene	0.69	6.9	---	21
Naphthalene	---	---	56	190
Metals				
Lead	---	---	400	800

Notes:

[1] If the current or currently intended future use of the contaminated site is a child care facility or school where children below the age of 18 are reasonably expected to be in frequent, repeated contact with the soil, the person conducting remediation shall remediate to a 1×10^{-6} excess lifetime cancer risk.

[2] Site-specific Human Health Risk Assessment values were not calculated for the Site as residential SRLs are conservative risk-based values and will be used as cleanup criteria.

[3] Site-specific groundwater protection levels were not caluclated for the Site as described in Section 3.

--- = Not Applicable

mg/kg = milligram(s) per kilogram

EPA = U.S. Environmental Protection Agency

SRL = Soil Remediation Level. Source: https://apps.azsos.gov/public_services/Title_18/18-07.pdf

RSL = EPA Regional Screening Level. Source: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

Table 7-3. Ambient Air Action Levels and Maximum Allowable Ambient Air Concentrations

APS Former Douglas MGP Site, Douglas, Arizona

Constituent	Ambient Air Action Level Regional Screening Levels (RSL)[1] Residential Air (ng/m^3)	Rolling 3-Month Average National Ambient Air Quality Standards (ng/m^3)	4-month Maximum Allowable Ambient Air Concentrations Site Specific[2] (ng/m^3)	6-month Maximum Allowable Ambient Air Concentrations Site Specific[2] (ng/m^3)	1 Year Maximum Allowable Ambient Air Concentrations Site Specific[3] (ng/m^3)
Metal					
Lead[4]	150	150 [4]	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (PAHs)					
Acenaphthene	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA
Benzo(a)anthracene	1.7	NA	133	88	44
Benzo(a)pyrene	0.17	NA	13	9	4
Benzo(b fluoranthene	1.7	NA	133	88	44
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	17	NA	1,326	884	442
Chrysene	170	NA	13,260	8,840	4,420
Dibenz(a,h)anthracene	0.17	NA	13	9	4
Fluoranthene	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.7	NA	133	88	44
Naphthalene	8.3	NA	647	432	216
Phenathrene	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA

Notes:

[1] U.S. Environmental Protection Agency Residential Air Regional Screening Levels (November 2019). Assume 10% of RSL as action level.
https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

[2] Site-Specific Maximum Allowable Concentrations based on the RSLs assuming an exposure duration of 4 and 6 months for offsite residential receptors based on 26 year exposure duration.
The 4-month Maximum Allowable Concentration assumes 1/78th exposure so the RSL is multiplied by 78. The 6-month Maximum Allowable Concentration assumes 1/52nd exposure so the RSL is multiplied by 52.

[3] Site-Specific Maximum Allowable Concentrations based on the RSLs assuming an exposure duration of 1 year for offsite residential receptors based on 26 year exposure duration.
The 1-year Maximum Allowable Concentration assumes 1/26th exposure so the RSL is multiplied by 26.

[4] A lead concentration of 150 lead ng/m3 corresponds to a dust limit of 731 ug/Soil/m3 as TSP based on the average of the six maximum lead results (maximum lead result from each boring) in DU areas 1 and 3.

ug/m^3 = microgram per cubic meter

DU = decision unit

NA = not applicable, no RSL listed for constituent

ng/m^3 = nanogram per cubic meter

TSP = total suspended particulates

Figures

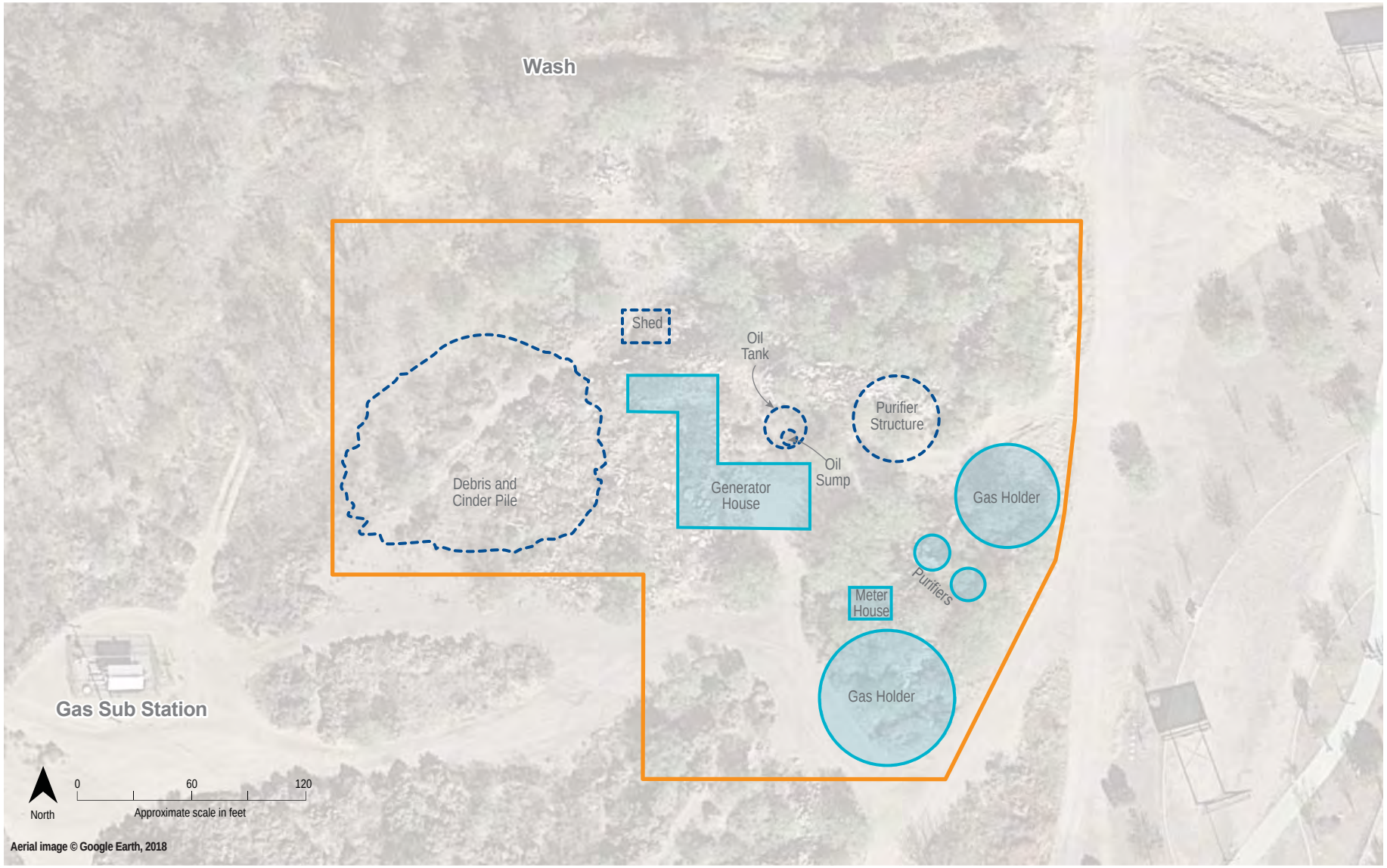
North

0 500 1,000

Approximate scale in feet

Figure 1-1. Site Location Map
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

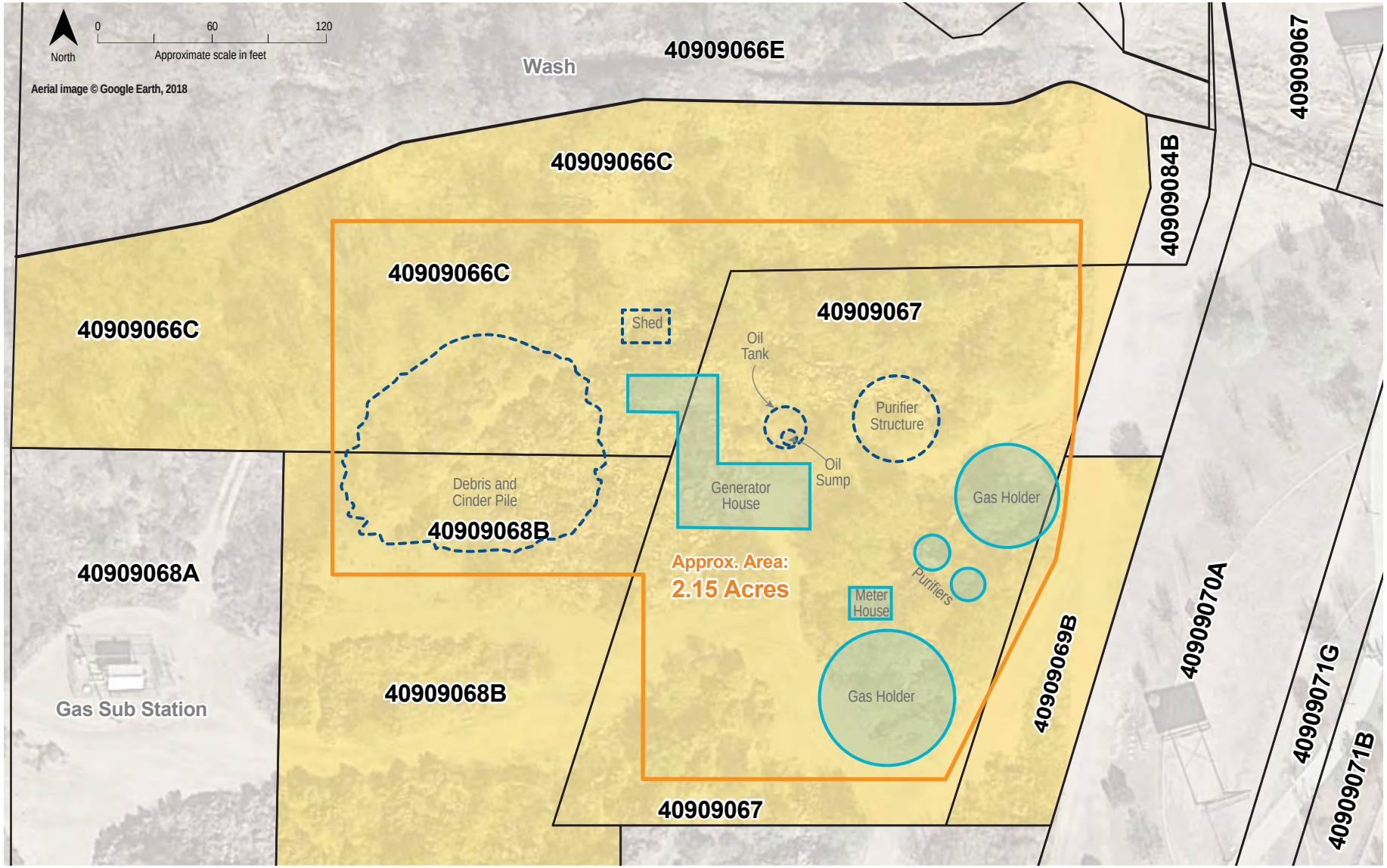


LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed

Figure 1-2. Site Plan and Former Structures Map
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



LEGEND

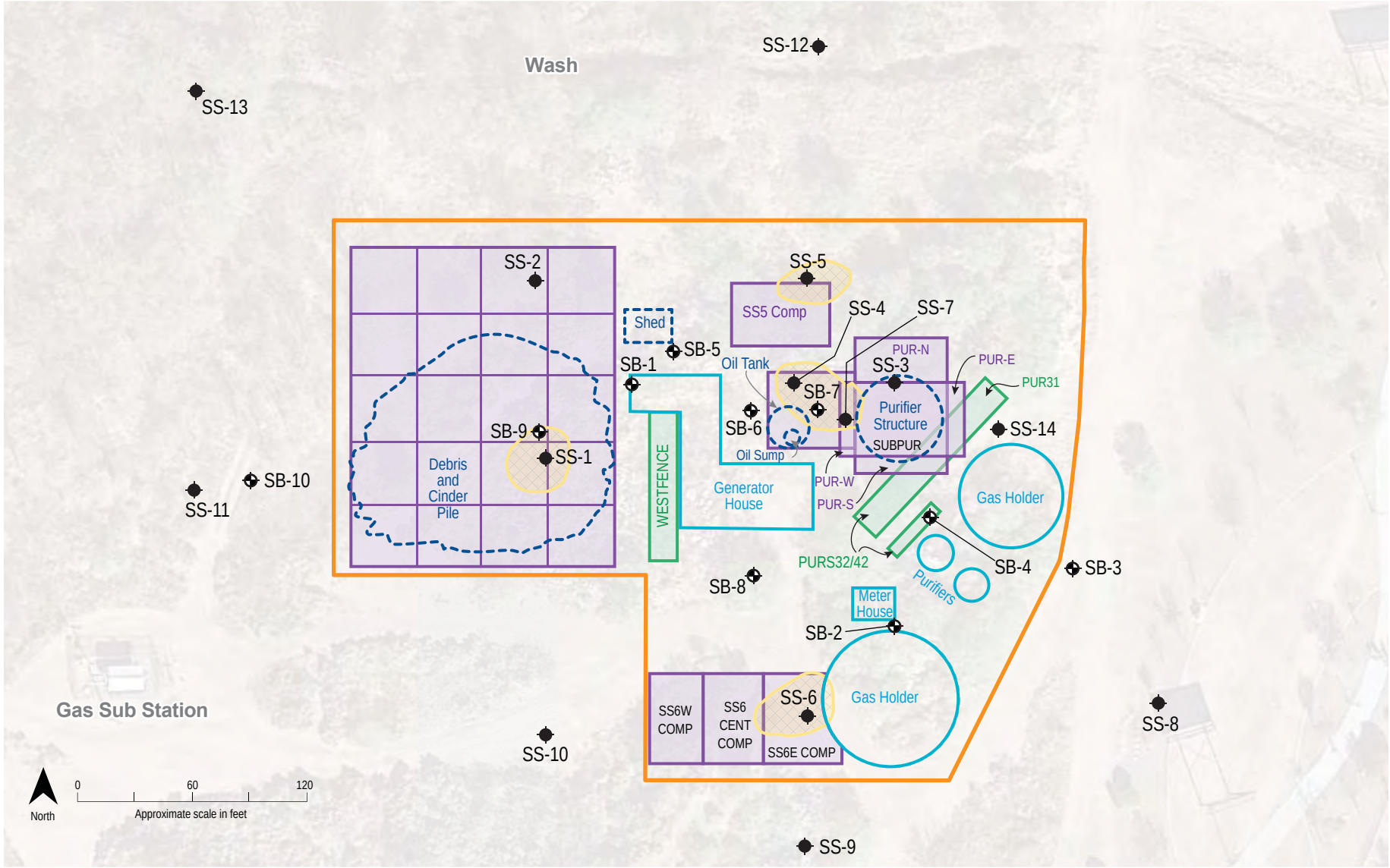
- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- 40909067 — Parcel boundary and parcel number
- Parcels in which Site resides

Note: Site location is approximate and based on available historical documents.

X002005000LOC Figure1-4_ParcelInfo_02 (02/2019)

Figure 1-3. Parcel Map
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- Composite surface soil sampling conducted June 1996 (before excavation activities)
- Phase I composite surface soil sampling conducted August 1996 (after Phase I excavation activities)
- Phase II composite subsurface soil sampling conducted November 1996 (after Phase II excavation activities)

Figure 1-4. Previous Investigation Sampling Locations
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
SS-3	Surface
SS-8	Surface
SS-9	Surface
SS-11	Surface
SS-12	Surface
SS-13	Surface
SB-1	4.5-6, 9-10.5
SB-2	9-10.5
SB-3	9-10.5
SB-4	3-4.5, 9-10.5
SB-5	9-10.5
SB-6	9-10.5, 15-16.5
SB-7	10-11.5
SB-8	9-10, 20-21.5
SB-9	3-4, 9-10.5, 15-16.5
SB10	9-10.5
Debris B-2	Surface (composite)
Debris C-2	Surface (composite)
Debris D-2	Surface (composite)
Debris E-2	Surface (composite)
PUR N-B	1
SUBPUR B	1
PURE31	1
WESTFENCE	Surface
SS4-7	1
SS5	1

Table provides sampling depths for samples that did not contain concentrations of PAHs above SRLs

SS-2

Sample Depth (ft bgs)	Surface	Surface
Sample Type	Discrete	Composite*
Benzo(a)pyrene	1.8D	0.6

*Composite samples collected after removal of debris pile, identified as debris B-2.

SS-5 Comp

Sample Depth (ft bgs)	1
Sample Type	Comp
Benzo(a)anthracene	0.2
Benzo(a)pyrene	0.5
Benzo(b)fluoranthene	0.2
Benzo(k)fluoranthene	0.1
Dibenzo(a,h)anthracene	0.25U
Indeno(1,2,3-cd)pyrene	0.3

*SS-5 Comp Area Excavated to 1-foot bgs

SS-5

Sample Depth (ft bgs)	Surface	Surface
Sample Type	Discrete	Comp
Benzo(a)anthracene	160D	Not Analyzed
Benzo(a)pyrene	230D	Not Analyzed
Benzo(b)fluoranthene	170D	Not Analyzed
Benzo(k)fluoranthene	93D	Not Analyzed
Dibenzo(a,h)anthracene	8.6D	Not Analyzed
Indeno(1,2,3-cd)pyrene	160D	Not Analyzed

SS-4

Sample Depth (ft bgs)	Surface	1*
Sample Type	Discrete	Comp
Benzo(a)pyrene	4.7D	0.4
Indeno(1,2,3-cd)pyrene	8.2D	0.3

*Composite sample (SS-4-7) from SS4/SS7 areas

SS-7

Sample Depth (ft bgs)	Surface	1*
Sample Type	Discrete	Comp
Benzo(a)pyrene	5.6D	0.4
Indeno(1,2,3-cd)pyrene	8.6D	0.3

*Composite sample (SS-4-7) from SS4/SS7 areas

Debris A-2

Sample Depth (ft bgs)	Surface
Sample Type	Comp
Benzo(a)pyrene	0.7

Soil at debris areas 3, 4, 9, and 19 excavated to 1-foot bgs.

Soil excavated to approximately 1-foot bgs to the north and west and purifier structure. Areas to the south and east not excavated due to gas line.

PUR-E31 excavated to 1-foot bgs.

SS-14

Sample Depth (ft bgs)	Surface
Sample Type	Discrete
Benzo(a)pyrene	0.76D

SS-1

Sample Depth (ft bgs)	Surface	Surface
Sample Type	Discrete	Composite*
Benzo(a)anthracene	17D	0.03
Benzo(a)pyrene	33D	0.07
Benzo(b)fluoranthene	21D	0.03
Dibenzo(a,h)anthracene	0.75	0.05U
Indeno(1,2,3-cd)pyrene	25D	0.05

*Composite samples collected after removal of debris pile, identified as debris D-2.

SB-4 (1.5, 4.5, 10.5)

Sample Depth (ft bgs)	0-1.5	3-4.5
Sample Type	Discrete	Comp
Benzo(a)pyrene	4.5D	0.017U

PURS32/42 (composite)

Sample Depth (ft bgs)	PURS32	PURS42
Sample Type	1	2.5
Benzo(a)pyrene	Comp	Comp
	1.8	1.5

*PURS32/42 area excavated to 2.5-feet bgs.

SS-6

Sample Depth (ft bgs)	Surface	1	2.5
Sample Type	Discrete	Comp	Comp*
Benzo(a)pyrene	3.4D	2.9	0.1U
Benzo(b)fluoranthene	8.8D	1.3	0.1U
Dibenzo(a,h)anthracene	1.0D	0.5U	0.1U
Indeno(1,2,3-cd)pyrene	13D	1.8	0.1U

*SS6WC, SS6EC, and SS6CC composite samples from SS-6 Area were all nondetect after soil was excavated to 1-foot bgs.

SS-10

Sample Depth (ft bgs)	Surface
Sample Type	Discrete
Benzo(a)pyrene	1.3D

PURS31/41 (composite)

Sample Depth (ft bgs)	PURS31	PURS41
Sample Type	1	2.5
Benzo(a)anthracene	Comp	Comp
Benzo(a)pyrene	6.9	0.1U
	6.6	0.1U

*PURS31/41 area excavated to 2.5-feet bgs.

LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Composite surface soil sampling conducted June, 1996.
- Phase I composite surface soil sampling conducted August, 1996.
- Phase II composite subsurface soil sampling conducted November, 1996
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- At least one sample from sampling locations was analyzed for PAH. No PAH were detected.
- At least one sample from sampling locations was analyzed for PAH. PAH were detected, but were below residential and non-residential SRLs.
- At least one sample from sampling locations was analyzed for PAH. PAH were detected above residential SRLs.

North

0 60 120

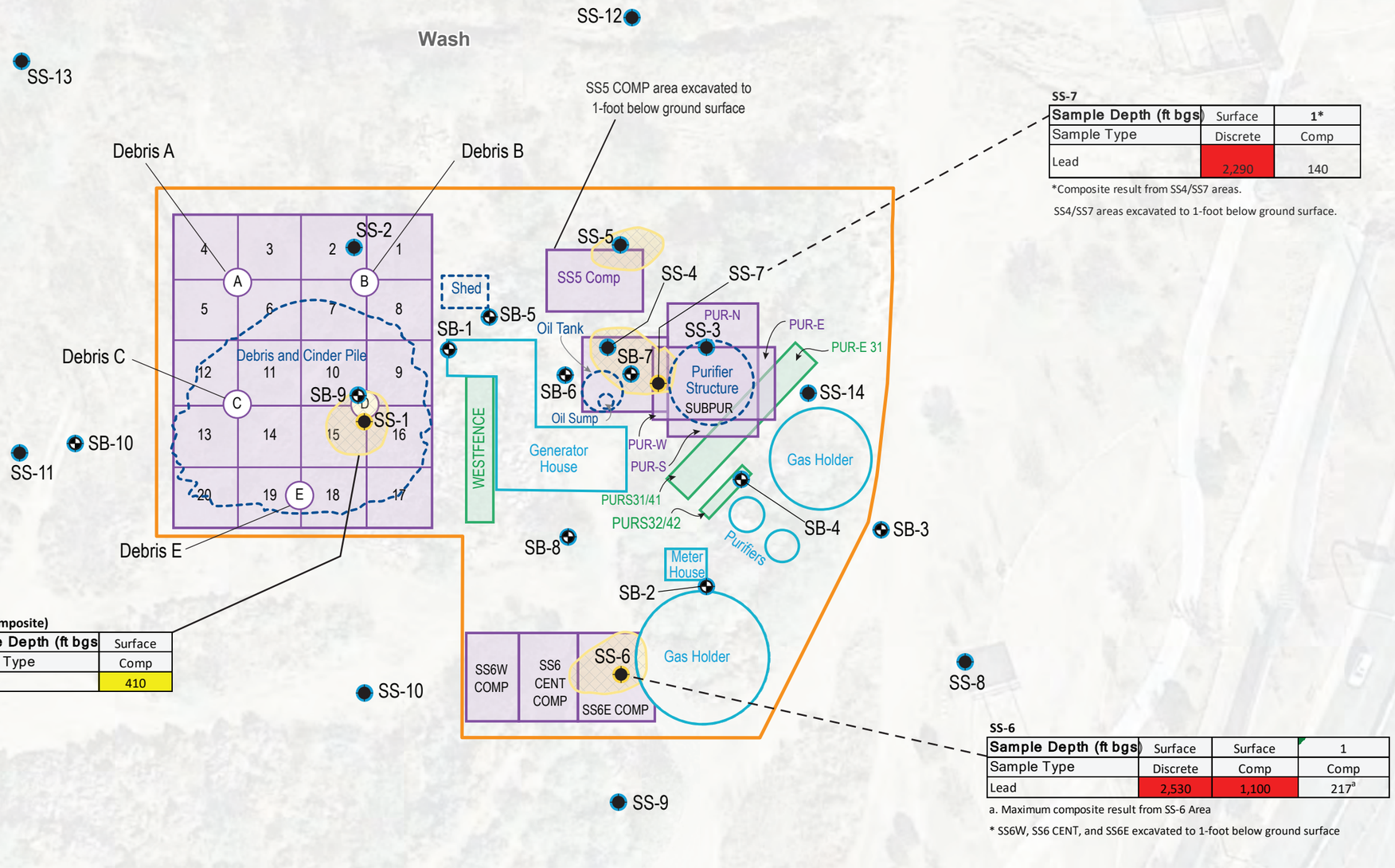
Approximate scale in feet

Figure 1-5. Previous Investigation Polynuclear Aromatic Hydrocarbons (PAHs) in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
SS-2	Surface
SS-3	Surface
SS-4	Surface
SS-5	Surface (Discrete and Composite)
SS5 Comp	1
SS4-7 (SS-4 and SS-7	Surface (composite), 1
SS-8	Surface
SS-9	Surface
SS-10	Surface
SS-11	Surface
SS-12	Surface
BACK SS11-12	Surface (composite)
SS-13	Surface
SS-14	Surface
SB-1	4.5-6, 9-10.5
SB-2	9-10.5
SB-3	9-10.5
SB-4	0-1.5, 3-4.5, 9-10.5
SB-5	9-10.5
SB-6	9-10.5, 15-16.5
SB-7	10-11.5
SB-8	9-10, 20-21.5
SB-9	9-10.5, 15-16.5
SB10	9-10.5
Debris A	Surface (composite)
Debris B	Surface (composite)
Debris C	Surface (composite)
Debris D	Surface (composite)
Debris E	Surface (composite)
PUR N	>1 (Estimated)
Subpurifier	Below pad

Notes:
1. Samples and sampling depths for sample locations except SS-1



SS-7

Sample Depth (ft bgs)	Surface	1*
Sample Type	Discrete	Comp
Lead	2,290	140

*Composite result from SS4/SS7 areas.

SS4/SS7 areas excavated to 1-foot below ground surface.

SS-1 (Composite)

Sample Depth (ft bgs	Surface
Sample Type	Comp
Lead	410

SS-6

Sample Depth (ft bgs)	Surface	Surface	1
Sample Type	Discrete	Comp	Comp
Lead	2,530	1,100	217[a]

a. Maximum composite result from SS-6 Area

* SS6W, SS6 CENT, and SS6E excavated to 1-foot below ground surface

LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Composite surface soil sampling conducted June, 1996.
- Phase I composite surface soil sampling conducted August, 1996.
- Phase II composite subsurface soil sampling conducted November, 1996
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- At least one sample from sampling locations was analyzed for lead. Lead was detected, but was below residential and non-residential SRLs.
- At least one sample from sampling locations was analyzed for lead. Lead was detected above residential SRL

North

0 60 120

Approximate scale in feet

Figure 1-6. Previous Investigation Lead in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
SS-8	Surface, 20-21.5
SS-12	Surface
SS-14	Surface
SS-1 Area	Surface
SS-5 Area	Surface
SS-11/SS-12 Area	Surface

Table provides sampling depths for samples that did not contain concentrations of arsenic above residential and non-residential SRLs (10 mg/kg)

SS-13 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	10.4

SB-1 - Discrete

Sample Depth (ft bgs)	4.5-6	9-10.5
Arsenic	34.1	20

SS-2 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	13.2

SB-5 - Discrete

Sample Depth (ft bgs)	9-10.5
Arsenic	15.8

SS-4 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	28.8

SS-4/SS-7 Area - Composite

Sample Depth (ft bgs)	Surface	>1
Arsenic	13	15

SS-5 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	30.2

SS-5 Comp - Composite

Sample Depth (ft bgs)	>1
Arsenic	18

SB-7 - Discrete

Sample Depth (ft bgs)	10-11.5
Arsenic	18.3

SS-7 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	33.5

PUR-N - Composite

Sample Depth (ft bgs)	Surface
Arsenic	11

SS-3 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	17.9

Purifier - Composite

Sample Depth (ft bgs)	Below Pad
Arsenic	15

Debris A - Composite

Sample Depth (ft bgs)	Surface
Arsenic	18

Debris B - Composite

Sample Depth (ft bgs)	Surface
Arsenic	14

SB-9 - Discrete

Sample Depth (ft bgs)	9-10.0	15-16.5
Arsenic	19.9	15.1

Debris D - Composite

Sample Depth (ft bgs)	Surface
Arsenic	17

Debris C - Composite

Sample Depth (ft bgs)	Surface
Arsenic	19

SB-10 - Discrete

Sample Depth (ft bgs)	9-10.5
Arsenic	15.3

SS-11 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	16.8

SB-4 - Discrete

Sample Depth (ft bgs)	0-1.5	3-4.5	9-10.5
Arsenic	18.3	10	26

SB-3 - Discrete

Sample Depth (ft bgs)	9-10.5
Arsenic	19.9

Debris D - Composite

Sample Depth (ft bgs)	Surface
Arsenic	17

SS-1 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	14.8

SB-6 - Discrete

Sample Depth (ft bgs)	9-10.5	15-16.5
Arsenic	22.6	19.1

SB-8 - Discrete

Sample Depth (ft bgs)	9-10.0	20-21.5
Arsenic	27.7	8.7

SB-2 - Discrete

Sample Depth (ft bgs)	9-10.5
Arsenic	42.1

SS-6 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	83.5

SS-10 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	14.9

SS6 Area - C - Composite

Sample Depth (ft bgs)	>1
Arsenic	23

SS6 Area - W - Composite

Sample Depth (ft bgs)	>1
Arsenic	24

SS6 Area - Composite

Sample Depth (ft bgs)	Surface
Arsenic	19

SS6 Area - E - Composite

Sample Depth (ft bgs)	>1
Arsenic	18

SS-9 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	11.4

Multiple - Composite
(SS-1, SS4-7, SS-5, and SS-7)

Sample Depth (ft bgs)	Surface
Arsenic	12

Multiple composite sample of composite samples SS-1, SS4-7, SS-5, and SS-7.

Gas Sub Station

Wash

Debris and Cinder Pile

Oil Tank

Oil Sump

Shed

SS5 Comp

Purifier Structure

SUBPUR

Generator House

WESTFENCE

Gas Holder #1

Gas Holder #2

Meter House

Purifiers

SS6W COMP

SS6 CENT COMP

SS6E COMP

PUR-N

PUR-E

PUR-E 31

PUR-W

PUR-S

PURS31/41

PURS32/42

SS-1 SS-2 SS-3 SS-4 SS-5 SS-6 SS-7 SS-8 SS-9 SS-10 SS-11 SS-12 SS-13 SS-14

SB-1 SB-2 SB-3 SB-4 SB-5 SB-6 SB-7 SB-8 SB-9 SB-10

LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Composite surface soil sampling conducted June, 1996.
- Phase I composite surface soil sampling conducted August, 1996.
- Phase II composite subsurface soil sampling conducted November, 1996
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- At least one sample from sampling locations was analyzed for arsenic. No arsenic was detected.
- At least one sample from sampling locations was analyzed for arsenic. Arsenic was detected, but was below residential and non-residential SRLs.
- At least one sample from sampling locations was analyzed for arsenic. Arsenic was detected above residential SRL.

North

0 60 120

Approximate scale in feet

Figure 1-7. Previous Investigation
Arsenic in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
SB-1	4.5-6, 9-10.5, 15-16.5
SB-2	9-10.5
SB-3	9-10.5
SB-5	9-10.5
SB-6	9-10.5, 15-16.5
SB-7	10-11.5, 15-16
SB-9	0-1.5, 3-4, 9-10.5, 15-16.5
SB10	9-10.5
Debris 1	Surface (composite)
Debris 5	Surface (composite)
Debris 6	Surface (composite)
Debris 7	Surface (composite)
Debris 8	Surface (composite)
Debris 10	Surface (composite)
Debris 11	Surface (composite)
Debris 14	Surface (composite)
Debris 15	Surface (composite)
Debris 16	Surface (composite)
Debris 17	Surface (composite)
Debris 20	Surface (composite)
SS4-7	1
SS5 Comp	1

This table represents depths of TPH analyses that were below the laboratory reporting limit.

BACK SS11-12 - Composite

Sample Depth (ft bgs)	Surface
TPH	110

SS4-7 - Composite

Sample Depth (ft bgs)	Surface
TPH	270

Debris 3 (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	50	20U

Debris 2 - Composite

Sample Depth (ft bgs)	Surface
TPH	23

Debris 9 (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	73	20U

SS5 - Composite

Sample Depth (ft bgs)	Surface
TPH	480

PUR N - (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	71	140

SB-1 (3, 6, 10.5, 16.5)

Sample Depth (ft bgs)	1.5-3
TPH	780

Subpurifier - Composite

Sample Depth (ft bgs)	Surface
TPH	57

Debris 4 (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	590	20U

Debris 12 - Composite

Sample Depth (ft bgs)	Surface
TPH	24

PUR E - Composite

Sample Depth (ft bgs)	Surface
TPH	520

Debris 13 - Composite

Sample Depth (ft bgs)	Surface
TPH	27

PUR W - Composite

Sample Depth (ft bgs)	Surface
TPH	150

PUR S - Composite

Sample Depth (ft bgs)	Surface
TPH	73

Debris 19 (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	60	20U

SB-4 (1.5, 4.5, 10.5, 16.5)

Sample Depth (ft bgs)	0-1.5	3-4.5
TPH	4,000	24

Debris 18 - Composite

Sample Depth (ft bgs)	Surface
TPH	28

SS-1 - Composite

Sample Depth (ft bgs)	Surface
TPH	40

SS6 - Composite

Sample Depth (ft bgs)	Surface
TPH	780

SB-8 (10, 16.5, 21.5)

Sample Depth (ft bgs)	9-10
TPH	26

SS6W Comp - Composite

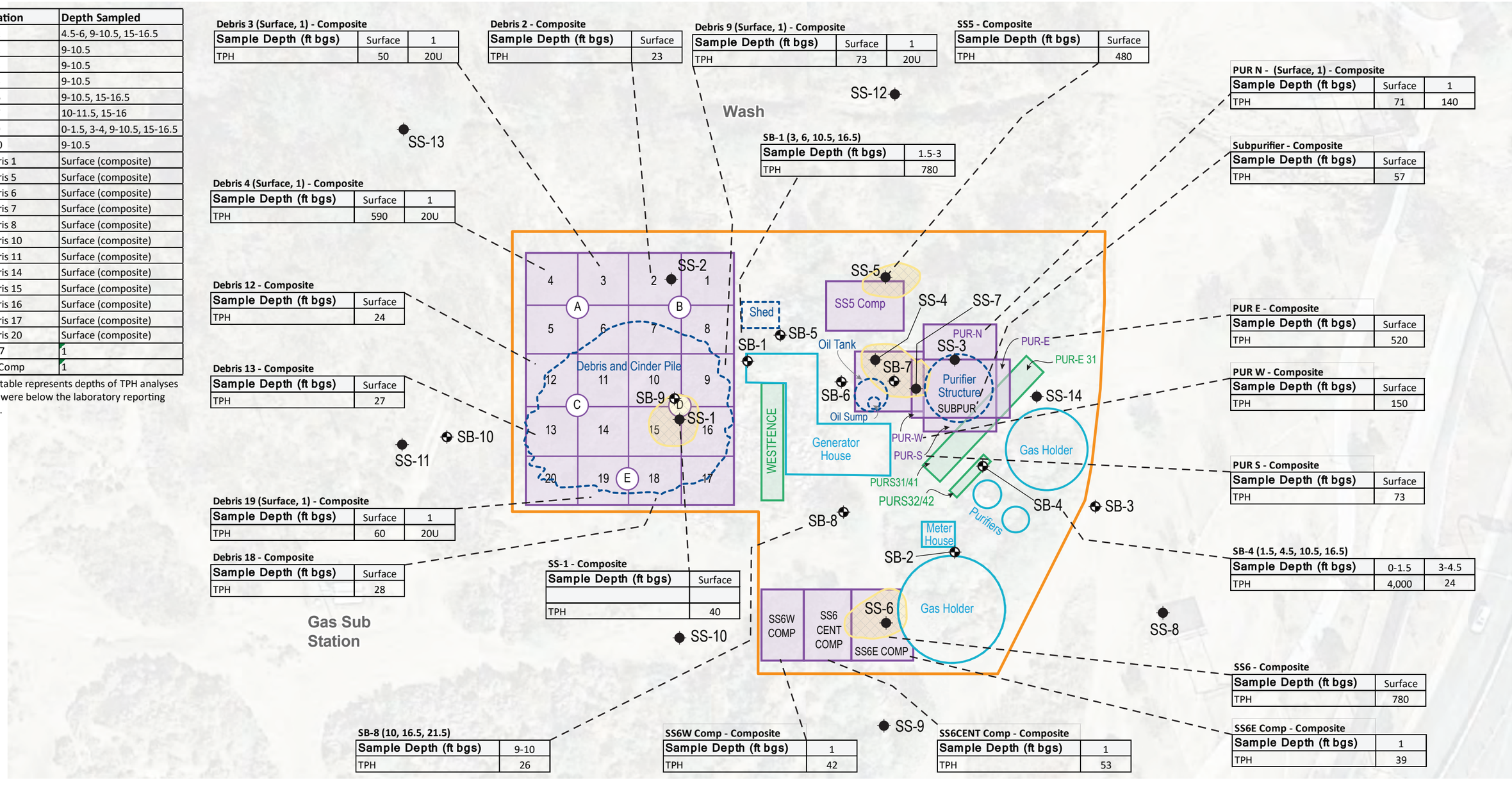
Sample Depth (ft bgs)	1
TPH	42

SS6CENT Comp - Composite

Sample Depth (ft bgs)	1
TPH	53

SS6E Comp - Composite

Sample Depth (ft bgs)	1
TPH	39



LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Composite Surface soil sampling conducted June, 1996.
- Phase I composite Surface soil sampling conducted August, 1996.
- Phase II composite subSurface soil sampling conducted November, 1996
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995

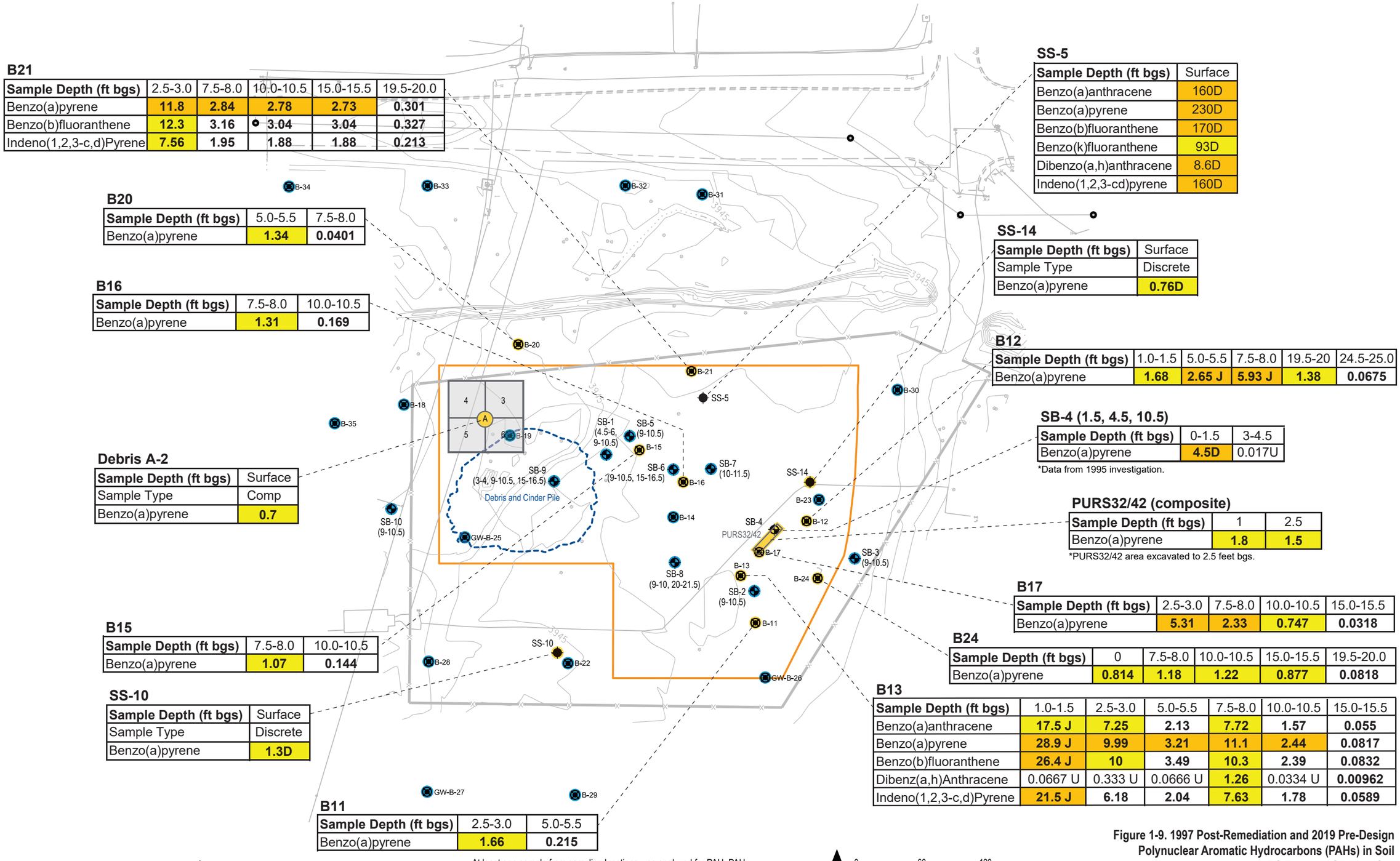
North

0 60 120

Approximate scale in feet

Figure 1-8. Previous Investigation Total Petroleum Hydrocarbons in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



B21

Sample Depth (ft bgs)	2.5-3.0	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Benzo(a)pyrene	**11.8**	**2.84**	**2.78**	**2.73**	**0.301**
Benzo(b)fluoranthene	**12.3**	**3.16**	**3.04**	**3.04**	**0.327**
Indeno(1,2,3-c,d)Pyrene	**7.56**	**1.95**	**1.88**	**1.88**	**0.213**

B20

Sample Depth (ft bgs)	5.0-5.5	7.5-8.0
Benzo(a)pyrene	**1.34**	**0.0401**

B16

Sample Depth (ft bgs)	7.5-8.0	10.0-10.5
Benzo(a)pyrene	**1.31**	**0.169**

Debris A-2

Sample Depth (ft bgs)	Surface
Sample Type	Comp
Benzo(a)pyrene	**0.7**

B15

Sample Depth (ft bgs)	7.5-8.0	10.0-10.5
Benzo(a)pyrene	**1.07**	**0.144**

SS-10

Sample Depth (ft bgs)	Surface
Sample Type	Discrete
Benzo(a)pyrene	**1.3D**

B11

Sample Depth (ft bgs)	2.5-3.0	5.0-5.5
Benzo(a)pyrene	**1.66**	**0.215**

SS-5

Sample Depth (ft bgs)	Surface
Benzo(a)anthracene	**160D**
Benzo(a)pyrene	**230D**
Benzo(b)fluoranthene	**170D**
Benzo(k)fluoranthene	**93D**
Dibenzo(a,h)anthracene	**8.6D**
Indeno(1,2,3-cd)pyrene	**160D**

SS-14

Sample Depth (ft bgs)	Surface
Sample Type	Discrete
Benzo(a)pyrene	**0.76D**

B12

Sample Depth (ft bgs)	1.0-1.5	5.0-5.5	7.5-8.0	19.5-20	24.5-25.0
Benzo(a)pyrene	**1.68**	**2.65 J**	**5.93 J**	**1.38**	**0.0675**

SB-4 (1.5, 4.5, 10.5)

Sample Depth (ft bgs)	0-1.5	3-4.5
Benzo(a)pyrene	**4.5D**	0.017U

*Data from 1995 investigation.

PURS32/42 (composite)

Sample Depth (ft bgs)	1	2.5
Benzo(a)pyrene	**1.8**	**1.5**

*PURS32/42 area excavated to 2.5 feet bgs.

B17

Sample Depth (ft bgs)	2.5-3.0	7.5-8.0	10.0-10.5	15.0-15.5
Benzo(a)pyrene	**5.31**	**2.33**	**0.747**	**0.0318**

B24

Sample Depth (ft bgs)	0	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Benzo(a)pyrene	**0.814**	**1.18**	**1.22**	**0.877**	**0.0818**

B13

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5
Benzo(a)anthracene	**17.5 J**	**7.25**	**2.13**	**7.72**	**1.57**	**0.055**
Benzo(a)pyrene	**28.9 J**	**9.99**	**3.21**	**11.1**	**2.44**	**0.0817**
Benzo(b)fluoranthene	**26.4 J**	**10**	**3.49**	**10.3**	**2.39**	**0.0832**
Dibenz(a,h)Anthracene	0.0667 U	0.333 U	0.0666 U	**1.26**	0.0334 U	**0.00962**
Indeno(1,2,3-c,d)Pyrene	**21.5 J**	**6.18**	**2.04**	**7.63**	**1.78**	**0.0589**

LEGEND

- Site Extent
- Site Fence
- Manhole
- Boring Location, November 2019
- (9-10.5) Feet Below Ground Surface
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- Residential Soil Remediation Level
- Non-Residential Soil Remediation Level
- At least one sample from sampling locations was analyzed for PAH. PAH were detected, but were below residential and non-residential SRLs.
- At least one sample from sampling locations was analyzed for PAH. PAH were detected above residential SRLs.

North

0 60 120

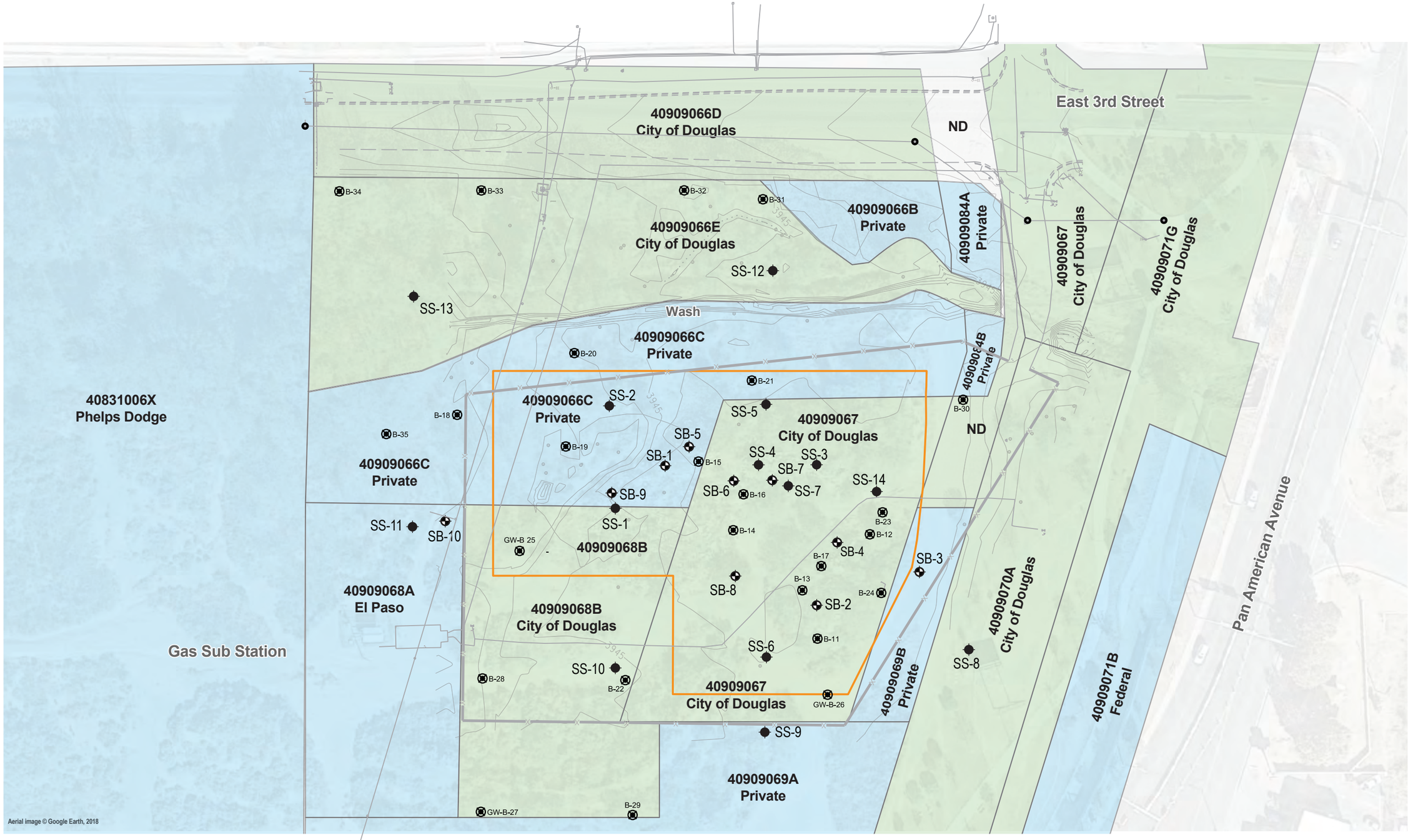
Approximate scale in feet

Notes:
1. 2019 sampling depths are listed on Figure 2-3.
2. 1996 Sampling depths are listed on Figure 2-5.

BI0508190846PHX Figure1-9_Historic_Predesign_PAHs_in_Soil (01/2020)

Figure 1-9. 1997 Post-Remediation and 2019 Pre-Design Polynuclear Aromatic Hydrocarbons (PAHs) in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



LEGEND

- Site Extent
- Site Fence
- Manhole
- Boring Location
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- 40909067 — Parcel boundary and parcel number
- City of Douglas owned parcels
- Privately owned parcels

ND = No Data

North

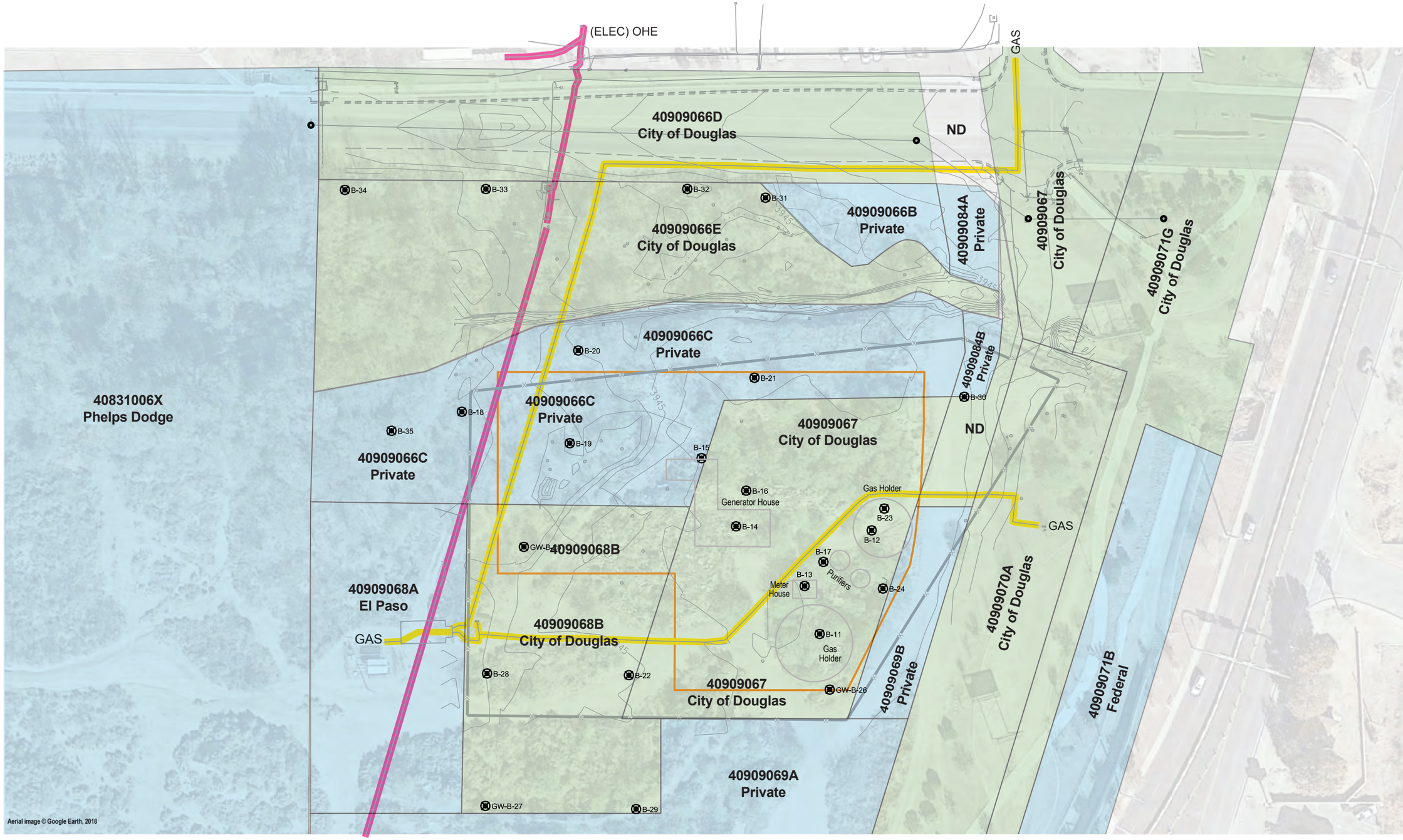
0 60 120

Approximate scale in feet

BI0508190846PHX Figure2-1_Boring_Locations_PreDesign_Testing (01/2020)

Figure 2-1. Boring Locations During Pre-Design Testing Investigation
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



LEGEND

- Site Extent
- Site Fence
- Manhole
- Soil Boring
- Overhead Electric (OHE)
- Gas
- 40909067 Parcel boundary and parcel number
- City of Douglas owned parcels
- Privately owned parcels

North

0 60 120

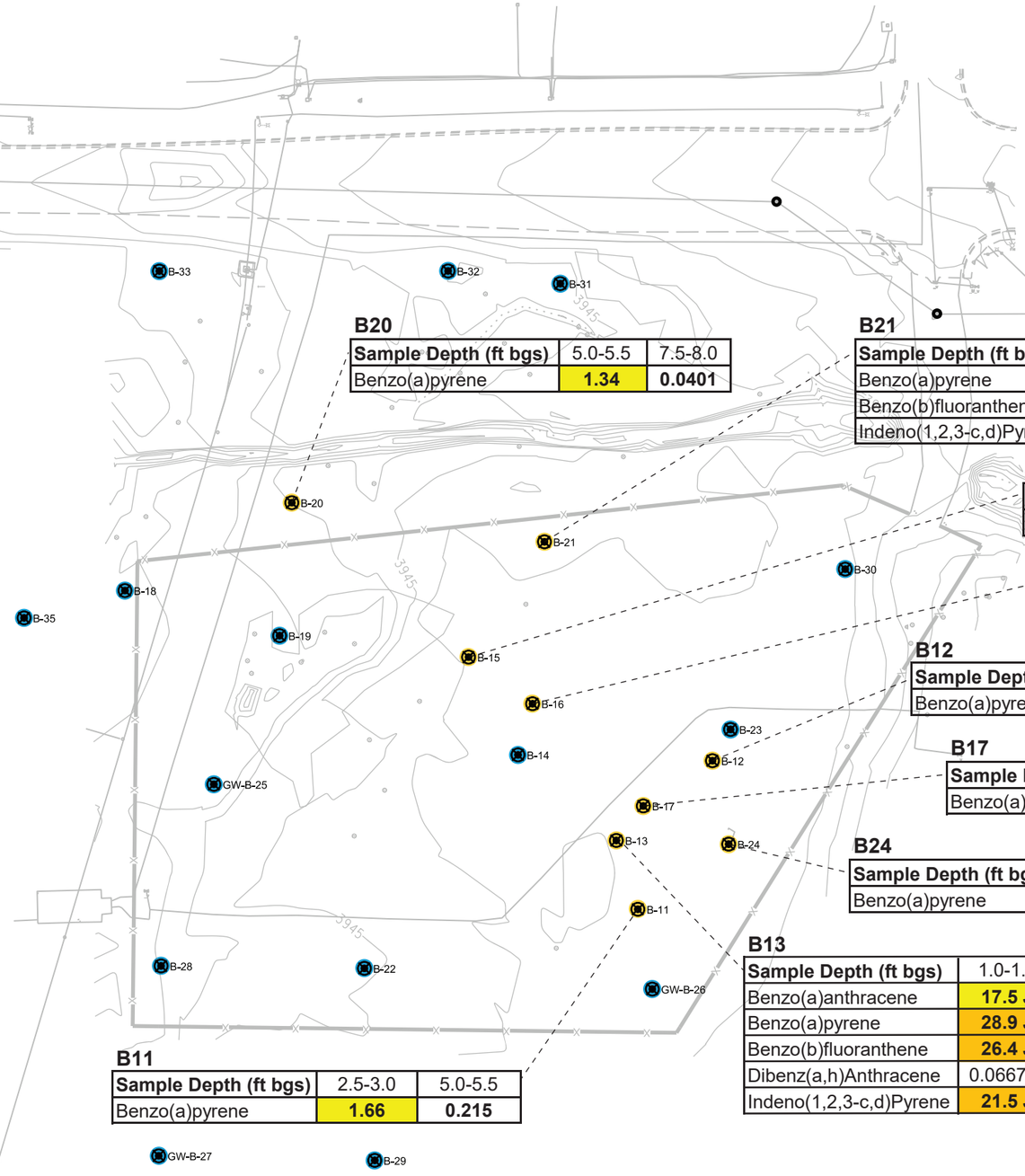
Approximate scale in feet

Figure 2-2. Utility Locations, Existing Subsurface Structures and Property Map
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
B11	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B12	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20, 24.5-25
B13	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B14	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B15	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 14.5-15
B16	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B17	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B18	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5
B19	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B20	0, 2.5-3, 5-5.5, 7.5-8, 9.5-10, 14.5-15, 19.5-20
B21	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20, 24.5-25
B22	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5
B23	0, 2.5-3, 5-5.5, 7.5-8, 9.5-10, 14.5-15, 19.5-20
B24	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B25	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 20-20.5, 25-25.5, 30-30.5, 40-40.5
B26	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 20-20.5, 25-25.5, 30-30.5, 40-40.5
B27	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 20-20.5, 25-25.5, 30-30.5, 40-40.5
B28	0, 5-5.5, 10-10.5, 15-15.5, 19.5-20
B29	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B30	0, 5-5.5, 10-10.5, 15-15.5, 19.5-20
B31	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B32	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B33	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B34	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B35	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5

*All samples listed in table were analyzed for PAHs.



B20

Sample Depth (ft bgs)	5.0-5.5	7.5-8.0
Benzo(a)pyrene	**1.34**	**0.0401**

B21

Sample Depth (ft bgs)	2.5-3.0	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Benzo(a)pyrene	**11.8**	**2.84**	**2.78**	**2.73**	**0.301**
Benzo(b)fluoranthene	**12.3**	**3.16**	**3.04**	**3.04**	**0.327**
Indeno(1,2,3-c,d)Pyrene	**7.56**	**1.95**	**1.88**	**1.88**	**0.213**

B15

Sample Depth (ft bgs)	7.5-8.0	10.0-10.5
Benzo(a)pyrene	**1.07**	**0.144**

B16

Sample Depth (ft bgs)	7.5-8.0	10.0-10.5
Benzo(a)pyrene	**1.31**	**0.169**

B12

Sample Depth (ft bgs)	1.0-1.5	5.0-5.5	7.5-8.0	19.5-20	24.5-25.0
Benzo(a)pyrene	**1.68**	**2.65 J**	**5.93 J**	**1.38**	**0.0675**

B17

Sample Depth (ft bgs)	2.5-3.0	7.5-8.0	10.0-10.5	15.0-15.5
Benzo(a)pyrene	**5.31**	**2.33**	**0.747**	**0.0318**

B24

Sample Depth (ft bgs)	0	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Benzo(a)pyrene	**0.814**	**1.18**	**1.22**	**0.877**	**0.0818**

B13

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5
Benzo(a)anthracene	**17.5 J**	**7.25**	**2.13**	**7.72**	**1.57**	**0.055**
Benzo(a)pyrene	**28.9 J**	**9.99**	**3.21**	**11.1**	**2.44**	**0.0817**
Benzo(b)fluoranthene	**26.4 J**	**10**	**3.49**	**10.3**	**2.39**	**0.0832**
Dibenz(a,h)Anthracene	0.0667 U	0.333 U	0.0666 U	**1.26**	0.0334 U	**0.00962**
Indeno(1,2,3-c,d)Pyrene	**21.5 J**	**6.18**	**2.04**	**7.63**	**1.78**	**0.0589**

B11

Sample Depth (ft bgs)	2.5-3.0	5.0-5.5
Benzo(a)pyrene	**1.66**	**0.215**

LEGEND

- Residential Soil Remediation Level
- Non-Residential Soil Remediation Level
- Manhole
- Soil Boring
- At least one sample from sampling locations was analyzed for PAH. PAH were detected, but were below residential and non-residential SRLs.
- At least one sample from sampling locations was analyzed for PAH. PAH were detected above residential SRLs.

North

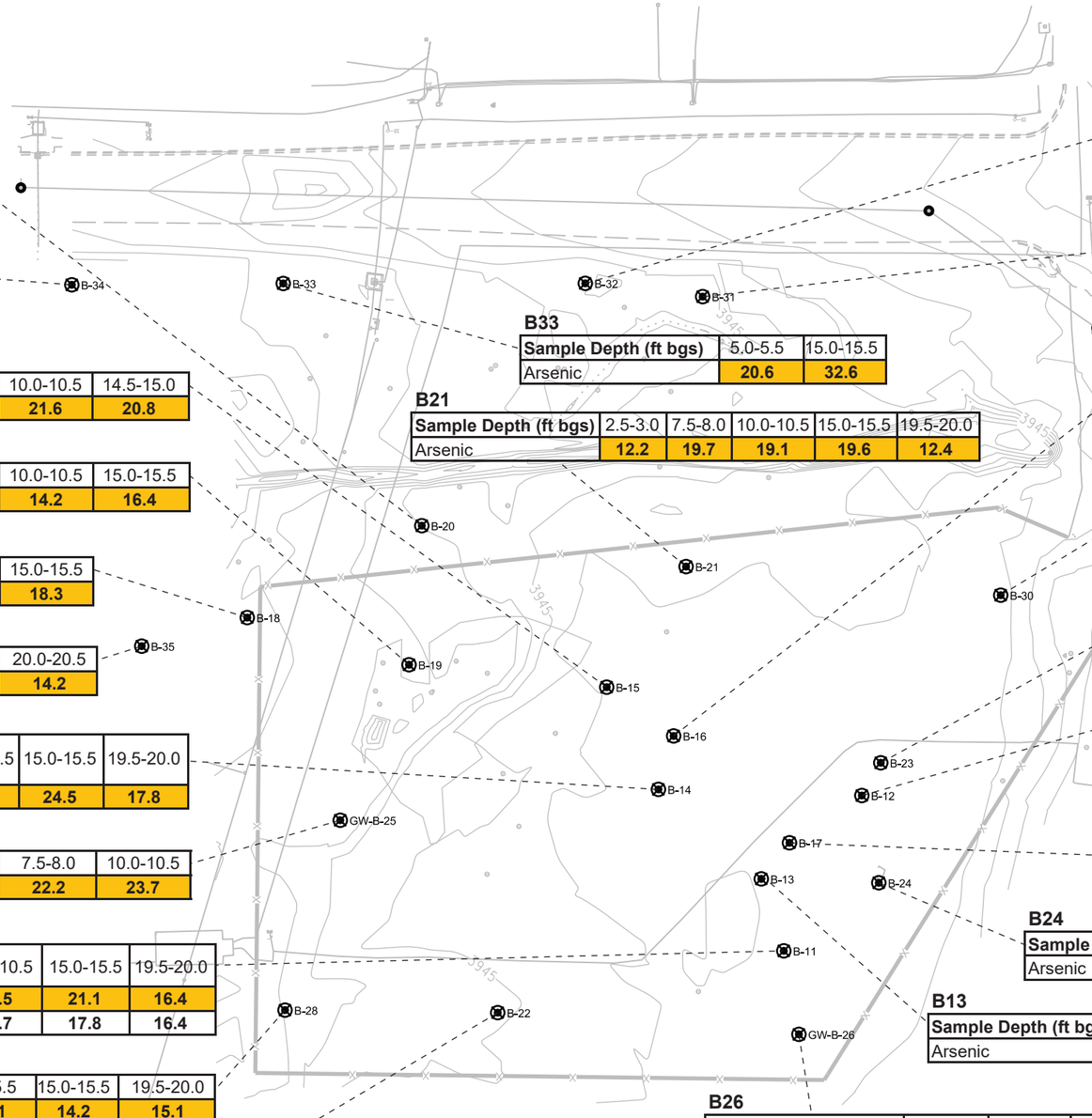
0 60 120

Approximate scale in feet

Notes:
-Groundwater wells were installed at boring locations B-25, B-26, and B-27, shown as GW-B-25, GW-B-26, and GW-B-17 on Figure 2-2.
-All sample locations analyzed for PAH's

Figure 2-3. 2019 Investigation
Polynuclear Aromatic Hydrocarbons (PAHs) in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



B20

Sample Depth (ft bgs)	0	2.5-3.0	5.0-5.5	9.5-10.0	14.5-15.0
Arsenic	**11.4**	**11.7 J**	**21**	**15.4**	**12.7**

B34

Sample Depth (ft bgs)	0-102719	10.0-10.5
Arsenic	**11.3**	**15.7**

B15

Sample Depth (ft bgs)	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	14.5-15.0
Arsenic	**10.8 J**	**13.8**	**12.4**	**21.6**	**20.8**

B19

Sample Depth (ft bgs)	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5
Arsenic	**13.7**	**20.6**	**11.1**	**14.2**	**16.4**

B18

Sample Depth (ft bgs)	2.0-2.5	7.0-7.5	10.0-10.5	15.0-15.5
Arsenic	**16.4**	**21.8**	**16.3**	**18.3**

B35

Sample Depth (ft bgs)	5.0-5.5	10.0-10.5	15.0-15.5	20.0-20.5
Arsenic	**13**	**14.6**	**13.8**	**14.2**

B14

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Arsenic	**10.9**	**17.9**	**25.5**	**21.3**	**24.8**	**24.5**	**17.8**

B25

Sample Depth (ft bgs)	0	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5
Arsenic	**10.9**	**14.8**	**50.3**	**22.2**	**23.7**

B11

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Arsenic	**12.9**	**18.9**	**19.5**	**20.7**	**23.5**	**21.1**	**16.4**
Lead	**93.2**	**420**	**141**	**158**	**63.7**	**17.8**	**16.4**

B28

Sample Depth (ft bgs)	5.0-5.5	15.0-15.5	19.5-20.0
Arsenic	**16.1**	**14.2**	**15.1**

B22

Sample Depth (ft bgs)	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5
Arsenic	**15.4**	**25.8**	**16.7**	**22**	**25**

B33

Sample Depth (ft bgs)	5.0-5.5	15.0-15.5
Arsenic	**20.6**	**32.6**

B21

Sample Depth (ft bgs)	2.5-3.0	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Arsenic	**12.2**	**19.7**	**19.1**	**19.6**	**12.4**

B32

Sample Depth (ft bgs)	15.0-15.5
Arsenic	**10.3**

B31

Sample Depth (ft bgs)	5.0-5.5	10.0-10.5	15.0-15.5	20.0-20.5
Arsenic	**17.6**	**12.8**	**18.4**	**12.6**

B16

Sample Depth (ft bgs)	0	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Arsenic	**10.3**	**11.5**	**14.2**	**13.4**	**20.1**	**23**	**17.7**

B30

Sample Depth (ft bgs)	5.0-5.5	15.0-15.5	19.5-20.0
Arsenic	**12.6**	**15.4**	**16**

B23

Sample Depth (ft bgs)	2.5-3.0	5.0-5.5	7.5-8.0	9.5-10.0	14.5-15.0	19.5-20.0
Arsenic	**14.8**	**26**	**23.9**	**15.3**	**42.5**	**12.6**

B12

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20
Arsenic	**18**	**14.1**	**17.2**	**15.7**	**20.6**	**23.1**	**18.1**
Lead	**166**	**8.74**	**169**	**531**	**30.8**	**21.1**	**62.8**

B17

Sample Depth (ft bgs)	2.5-3.0	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Arsenic	**12.6**	**17.3**	**19.4**	**16.7**	**17.1**

B24

Sample Depth (ft bgs)	0	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5
Arsenic	**10.3**	**12.3**	**41.6**	**11.1**	**20.6**	**16.4**

B13

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Arsenic	**14.5**	**18.9**	**12**	**24.5**	**22.7**	**21**	**12.1**

B26

Sample Depth (ft bgs)	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	20.0-20.5
Arsenic	**11.7**	**21.2 J**	**21.6**	**17.3**	**16.9**	**18.2**

B29

Sample Depth (ft bgs)	5.0-5.5	10.0-10.5	15.0-15.5	20.0-20.5
Arsenic	**15.9 J**	**15.1**	**20.4**	**22.5**

B27

Sample Depth (ft bgs)	0	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	20.0-20.5	25.0-25.5
Arsenic	**13.9**	**15.4**	**24.1**	**21.2**	**20.7**	**20.6**	**15.2**	**12.1**

LEGEND

- Residential Soil Remediation Level
- Non-Residential Soil Remediation Level
- Manhole
- Soil Boring

North

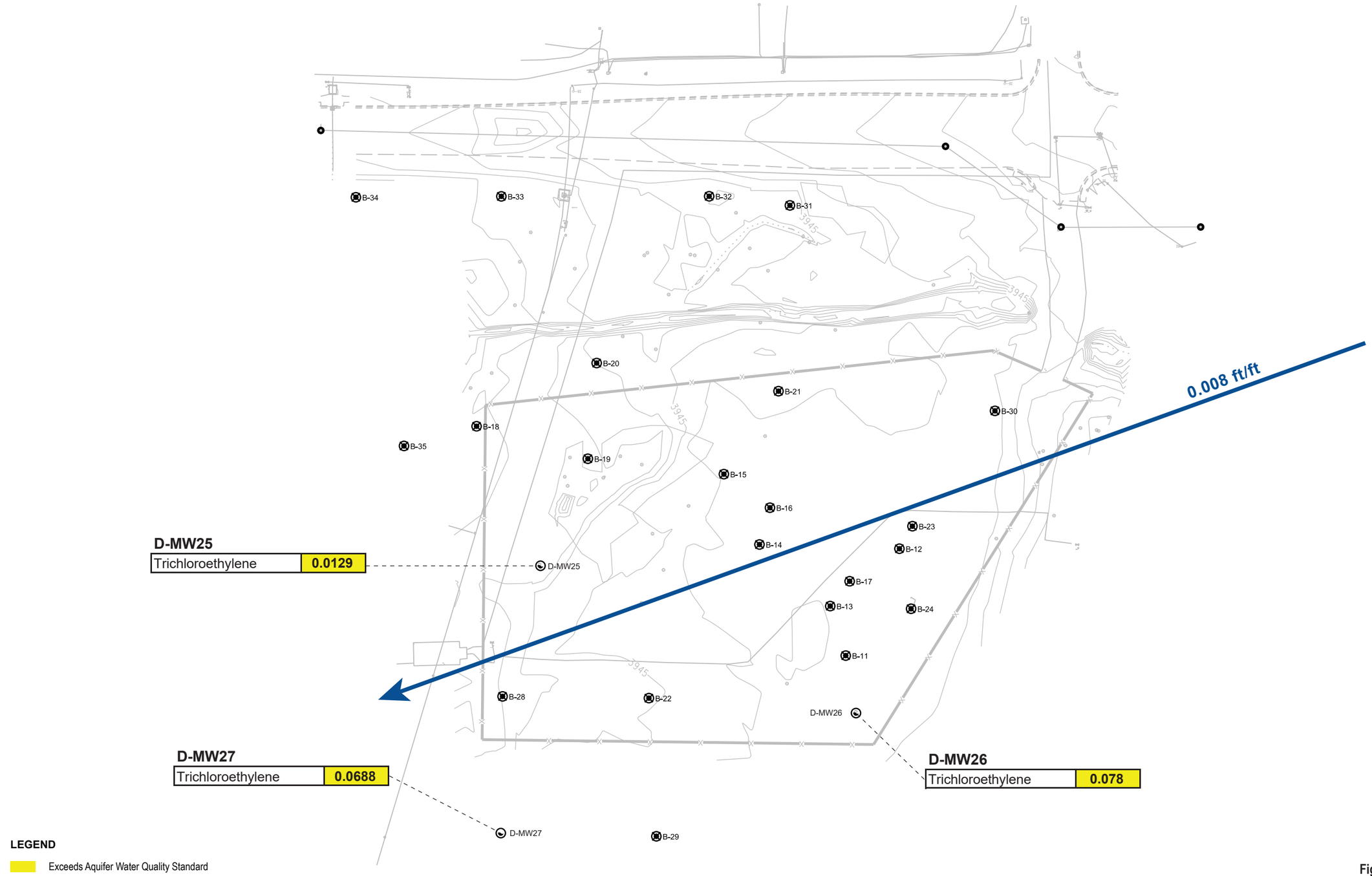
0 60 120

Approximate scale in feet

Note: Sampling depths are listed on Figure 2-2.

Figure 2-4. 2019 Investigation Metals in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



LEGEND

- Exceeds Aquifer Water Quality Standard
- Manhole
- Soil Boring
- Groundwater Well
- General Groundwater Flow Direction

North

0 60 120

Approximate scale in feet

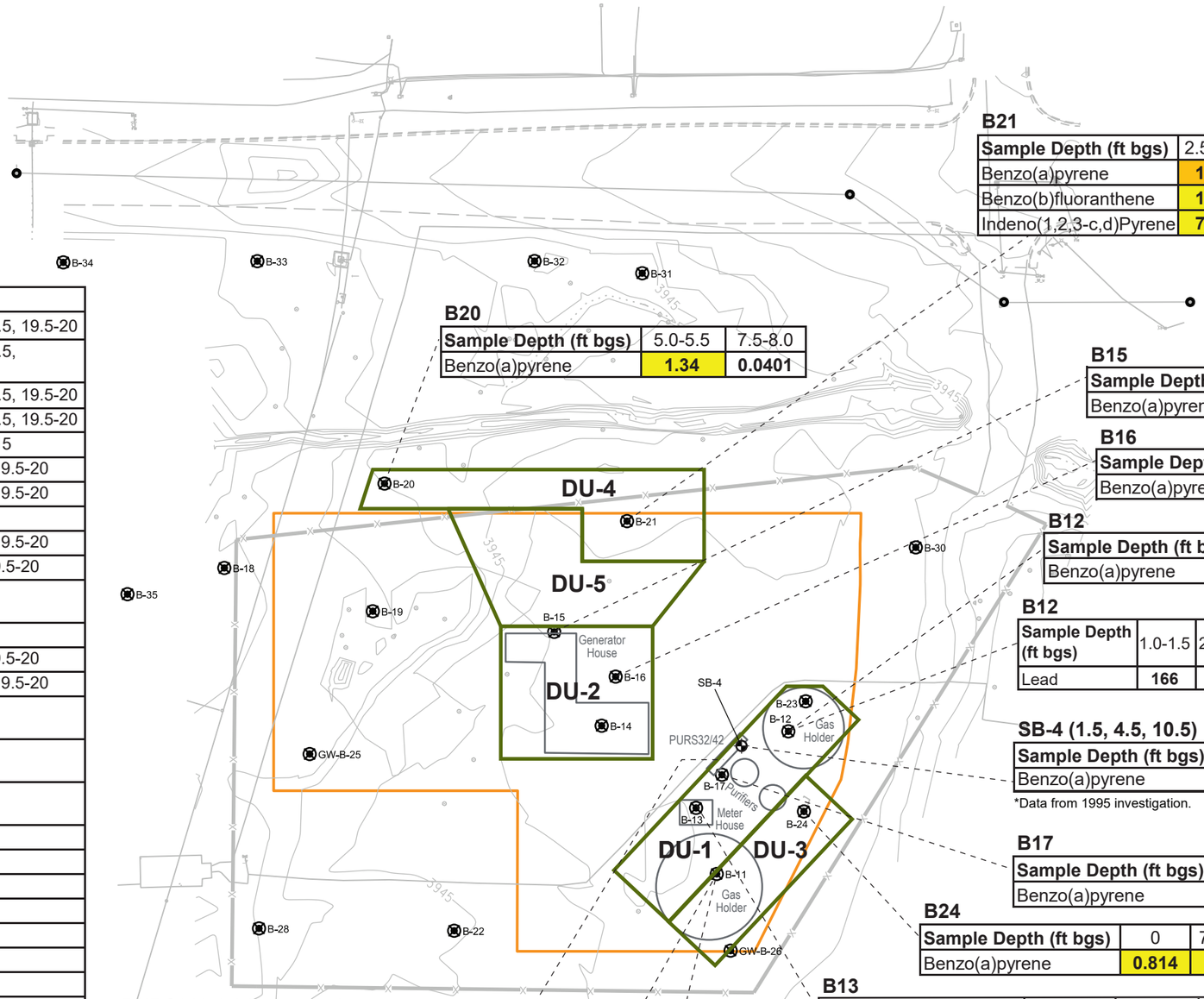
Note: Groundwater wells D-MW25, D-MW26, D-MW27 correspond to boring locations GW-B-25, GW-B-26, and GW-B-17 shown on Figure 2-2.

BI0508190846PHX Figure2-5_2019_Investigation_VOCs_in_Water (01/2020)

Figure 2-5. 2019 Investigation Volatile Organic Compounds (VOCs) in Water and Groundwater Flow Direction
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
B11	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B12	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20, 24.5-25
B13	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B14	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B15	1-1.5, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 14.5-15
B16	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B17	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B18	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5
B19	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B20	0, 2.5-3, 5-5.5, 7.5-8, 9.5-10, 14.5-15, 19.5-20
B21	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20, 24.5-25
B22	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5
B23	0, 2.5-3, 5-5.5, 7.5-8, 9.5-10, 14.5-15, 19.5-20
B24	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 19.5-20
B25	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 20-20.5, 25-25.5, 30-30.5, 40-40.5
B26	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 20-20.5, 25-25.5, 30-30.5, 40-40.5
B27	0, 2.5-3, 5-5.5, 7.5-8, 10-10.5, 15-15.5, 20-20.5, 25-25.5, 30-30.5, 40-40.5
B28	0, 5-5.5, 10-10.5, 15-15.5, 19.5-20
B29	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B30	0, 5-5.5, 10-10.5, 15-15.5, 19.5-20
B31	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B32	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B33	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B34	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5
B35	0, 5-5.5, 10-10.5, 15-15.5, 20-20.5



B21

Sample Depth (ft bgs)	2.5-3.0	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Benzo(a)pyrene	**11.8**	**2.84**	**2.78**	**2.73**	**0.301**
Benzo(b)fluoranthene	**12.3**	**3.16**	**3.04**	**3.04**	**0.327**
Indeno(1,2,3-c,d)Pyrene	**7.56**	**1.95**	**1.88**	**1.88**	**0.213**

B20

Sample Depth (ft bgs)	5.0-5.5	7.5-8.0
Benzo(a)pyrene	**1.34**	**0.0401**

B15

Sample Depth (ft bgs)	7.5-8.0	10.0-10.5
Benzo(a)pyrene	**1.07**	**0.144**

B16

Sample Depth (ft bgs)	7.5-8.0	10.0-10.5
Benzo(a)pyrene	**1.31**	**0.169**

B12

Sample Depth (ft bgs)	1.0-1.5	5.0-5.5	7.5-8.0	19.5-20	24.5-25.0
Benzo(a)pyrene	**1.68**	**2.65 J**	**5.93 J**	**1.38**	**0.0675**

B12

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20
Lead	**166**	**8.74**	**169**	**531**	**30.8**	**21.1**	**62.8**

SB-4 (1.5, 4.5, 10.5)

Sample Depth (ft bgs)	0-1.5	3-4.5
Benzo(a)pyrene	**4.5D**	0.017U

*Data from 1995 investigation.

B17

Sample Depth (ft bgs)	2.5-3.0	7.5-8.0	10.0-10.5	15.0-15.5
Benzo(a)pyrene	**5.31**	**2.33**	**0.747**	**0.0318**

B24

Sample Depth (ft bgs)	0	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Benzo(a)pyrene	**0.814**	**1.18**	**1.22**	**0.877**	**0.0818**

B13

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5
Benzo(a)anthracene	**17.5 J**	**7.25**	**2.13**	**7.72**	**1.57**	**0.055**
Benzo(a)pyrene	**28.9 J**	**9.99**	**3.21**	**11.1**	**2.44**	**0.0817**
Benzo(b)fluoranthene	**26.4 J**	**10**	**3.49**	**10.3**	**2.39**	**0.0832**
Dibenz(a,h)Anthracene	0.0667 U	0.333 U	0.0666 U	**1.26**	0.0334 U	**0.00962**
Indeno(1,2,3-c,d)Pyrene	**21.5 J**	**6.18**	**2.04**	**7.63**	**1.78**	**0.0589**

PURS32/42 (composite)

Sample Depth (ft bgs)	PURS32	PURS42
Benzo(a)pyrene	1.8	1.5

*Data from 1996 Phase II activities.

B11

Sample Depth (ft bgs)	2.5-3.0	5.0-5.5
Benzo(a)pyrene	**1.66**	**0.215**

B11

Sample Depth (ft bgs)	1.0-1.5	2.5-3.0	5.0-5.5	7.5-8.0	10.0-10.5	15.0-15.5	19.5-20.0
Lead	**93.2**	**420**	**141**	**158**	**63.7**	**17.8**	**16.4**

LEGEND

- Site Extent
- Site Fence
- Manhole
- Soil Boring
- DU-1 Anticipated Excavation Areas/Decision Units
- Residential Soil Remediation Level
- Non-Residential Soil Remediation Level
- Soil Boring Sample Location, October 1995

North

0 60 120

Approximate scale in feet

Notes:
1. Actual excavation areas will be based on test pit trenching and confirmation sampling results.
2. Results are from 2019 investigation unless otherwise noted.

Figure 7-1. Proposed Excavation Plan
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

LEGEND

- Site Extent
- Site Fence
- Manhole
- Soil Boring
- Overhead Electric (OHE)
- Gas
- Anticipated Excavation Areas/Decision Unit
- Excavation Area Near Gas Line

Proposed Maximum Excavation Depths

- 3-5'
- 5-7'
- 8-10'
- 10-15'
- 15-20'
- 20-22'
- 5'

Note: Actual excavation areas will be based on test pit trenching and confirmation sampling results.

North

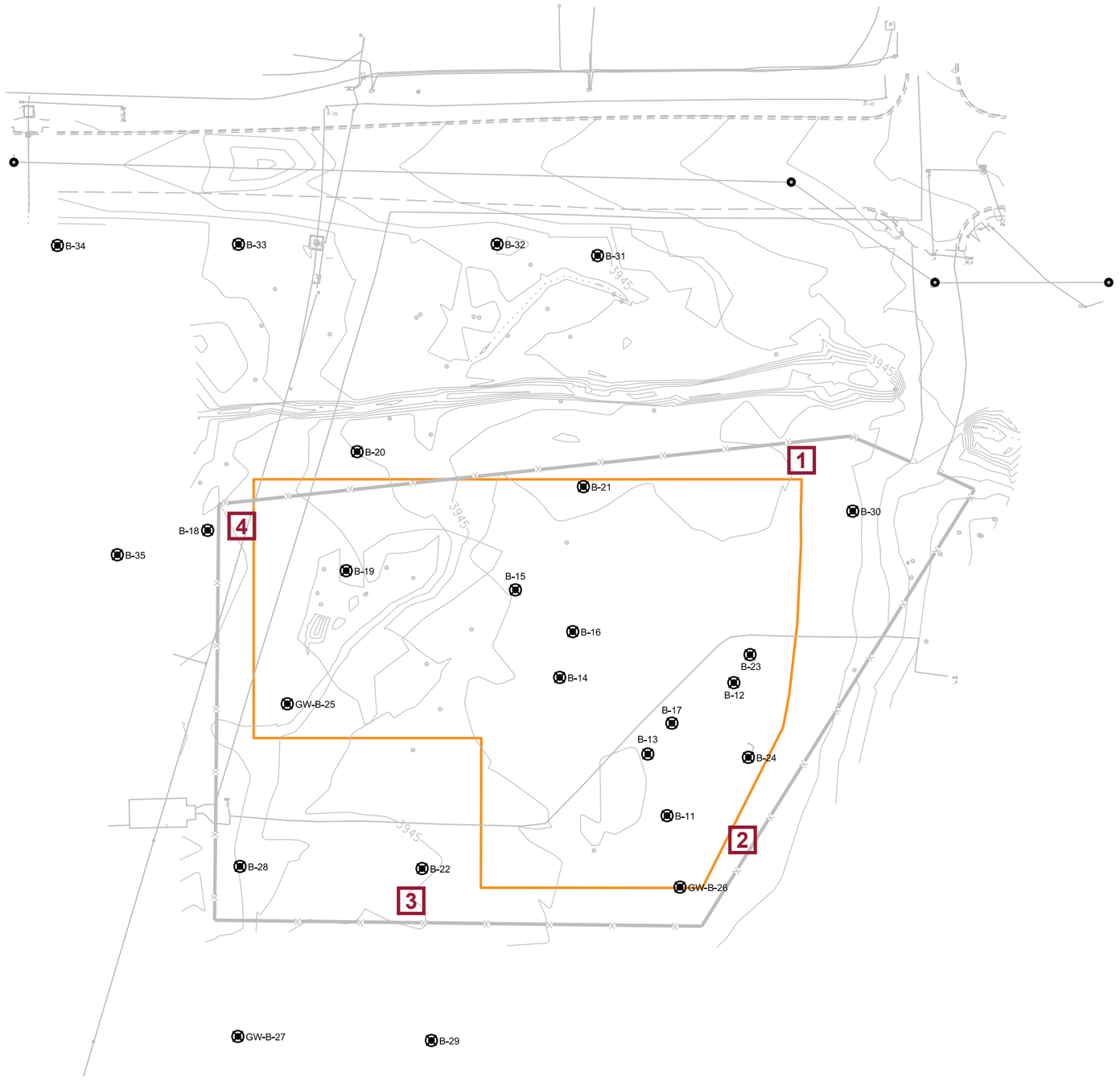
0 45 90

Approximate scale in feet

Figure 7-2. Proposed Excavation Depths
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

BI0508190846PHX Figure7-2_Proposed_Excavation_Depths (01/2020)



LEGEND

- Site Extent
- Site Fence
- Proposed Air Monitoring Locations
- Manhole
- Soil Boring

North

0 60 120

Approximate scale in feet

BI0508190846PHX Figure7-3_Proposed_Air_Monitoring_Locations_v2 (12/2019)

Figure 7-3. Proposed Air Monitoring Locations
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

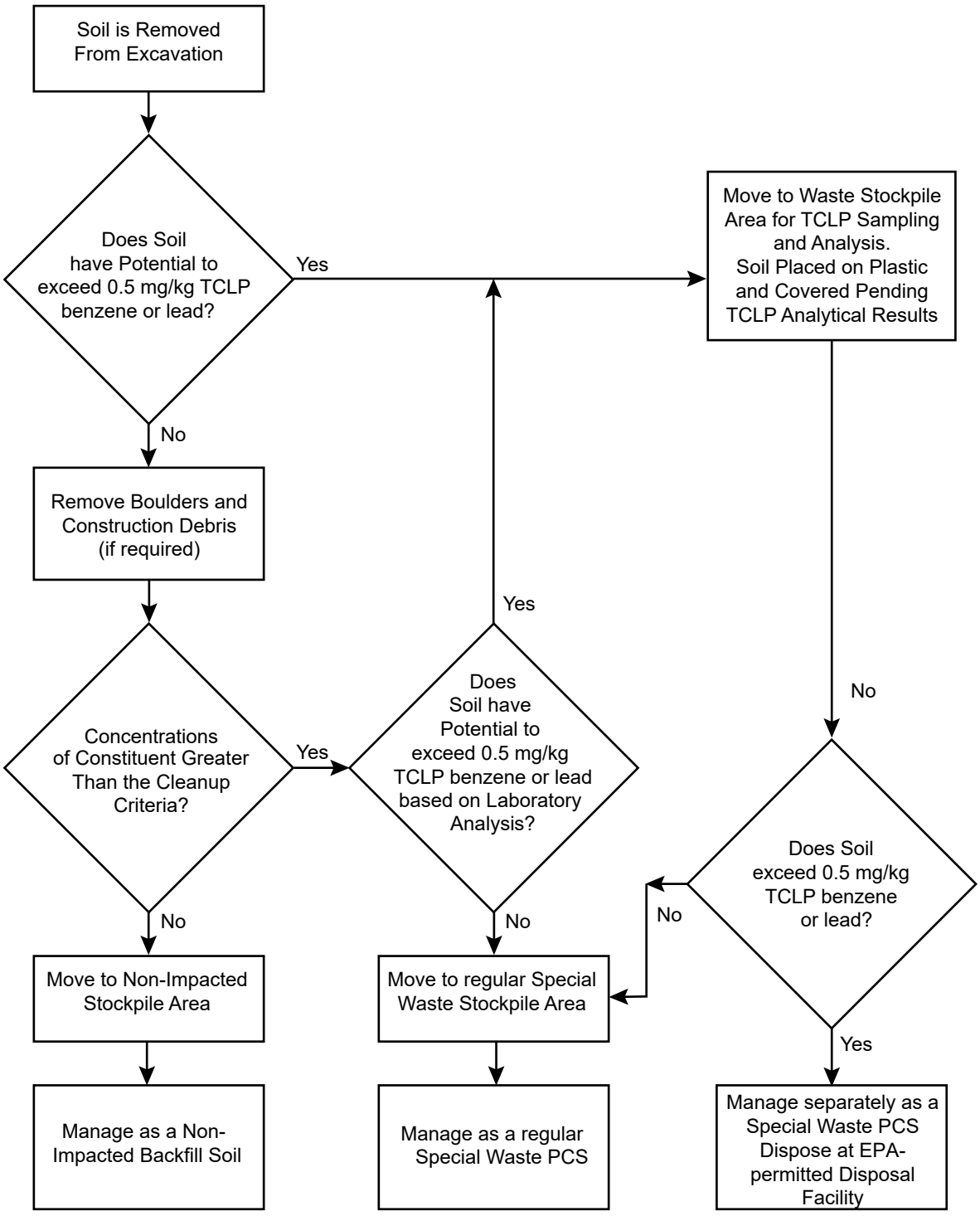


FIGURE 7-4
Waste Segregation Flow Chart
APS Douglas Former MGP Site
Douglas, Arizona

Appendix A
Executive Summary of Environmental Data Resources Report, November 2018

D3118600
Former Douglas Arizona Manufactured Gas Plant
Douglas, AZ 85607

Inquiry Number: 5485155.2s
November 14, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

FORMER DOUGLAS ARIZONA MANUFACTURED GAS PLANT
DOUGLAS, AZ 85607

COORDINATES

Latitude (North):	31.3357170 - 31˚ 20' 8.58''
Longitude (West):	109.5620580 - 109˚ 33' 43.40''
Universal Tranverse Mercator:	Zone 12
UTM X (Meters):	636800.9
UTM Y (Meters):	3467516.5
Elevation:	3946 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	6719529 DOUGLAS, AZ
Version Date:	2014

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20150621
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
FORMER DOUGLAS ARIZONA MANUFACTURED GAS PLANT
DOUGLAS, AZ 85607

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	DOUGLAS GAS CORPORAT	PAN AMERICAN AVE	EDR MGP	Lower	1 ft.
A2	USDHS USC&BP - DOUGL	5 N PAN AMERICAN AVE	UST	Higher	524, 0.099, SE
A3	DOUGLAS PORT OF ENTR	1 PAN AMERICAN AVE	VCP	Higher	532, 0.101, SE
B4	BORDER MART SHELL	100 E 3RD ST	UST, EMAP, Enforcement, Financial Assurance	Higher	586, 0.111, NE
B5	BORDER EXPRESS	305 N PAN AMERICAN A	LUST, UST, EMAP, Enforcement	Higher	659, 0.125, NE
B6	BORDER EXPRESS INC	305 N PAN AMERICAN A	EDR Hist Auto	Higher	659, 0.125, NE
7	DOUGLAS CHEVRON	461 N PAN AMERICAN A	UST, EMAP, Enforcement, Financial Assurance	Higher	982, 0.186, NE
8	WHITE KNIGHT HEALTHC	300 S 1ST ST	RCRA-CESQG, FINDS, ECHO	Higher	1029, 0.195, East
9	HAMLIN INC	230 INTERNATIONAL AV	RCRA NonGen / NLR, FINDS, ECHO	Higher	1057, 0.200, ESE
C10	WAL-MART SUPERCENTER	199 WEST 5TH STREET	AST	Lower	1295, 0.245, NW
C11	WALMART SUPERCENTER	199 W 5TH ST	RCRA-CESQG, EMAP, MANIFEST	Lower	1295, 0.245, NW
12	DOUGLAS, CITY OF - M	101 E 7TH ST	LUST, UST, EMAP	Higher	1502, 0.284, North
D13	TEXACO - BULK PLANT	7TH ST PAN AMERICAN	LUST, UST, EMAP	Higher	1714, 0.325, NNE
D14	PARK WEST PARTNERS W		AZURITE, AUL, EMAP	Higher	1983, 0.376, NNE
15	PARK WEST PARTNERS E		AZURITE, AUL, EMAP	Higher	2096, 0.397, NNE
16	SENOR BARRATO	560 N G AVE	LUST, UST, EMAP, Financial Assurance	Higher	2224, 0.421, NE
17	DOUGLAS DEVELOPMENT	SEC W. 9TH STREET &	VCP	Lower	2541, 0.481, NNW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

EXECUTIVE SUMMARY

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

AZ NPL ---------- NPL Detail Listing
AZ WQARF ---------- Water Quality Assurance Revolving Fund Sites

State- and tribal - equivalent CERCLIS

SPL ---------- Superfund Program List
SHWS ---------- ZipAcids List

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Directory of Solid Waste Facilities

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ---------- Brownfields Tracking System

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWTIRE ---------- Solid Waste Tire Facilities
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
CDL ---------- Clandestine Drug Labs

US CDL ..... National Clandestine Laboratory Register

Local Land Records

LIENS 2 ..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
SPILLS ..... Hazardous Material Logbook
SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ..... Formerly Used Defense Sites
DOD ..... Department of Defense Sites
SCRD DRYCLEANERS ..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ..... Financial Assurance Information
EPA WATCH LIST ..... EPA WATCH LIST
2020 COR ACTION ..... 2020 Corrective Action Program List
TSCA ..... Toxic Substances Control Act
TRIS ..... Toxic Chemical Release Inventory System
SSTS ..... Section 7 Tracking Systems
ROD ..... Records Of Decision
RMP ..... Risk Management Plans
RAATS ..... RCRA Administrative Action Tracking System
PRP ..... Potentially Responsible Parties
PADS ..... PCB Activity Database System
ICIS ..... Integrated Compliance Information System
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ..... Material Licensing Tracking System
COAL ASH DOE ..... Steam-Electric Plant Operation Data
COAL ASH EPA ..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ..... PCB Transformer Registration Database
RADINFO ..... Radiation Information Database
HIST FTTS ..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ..... Incident and Accident Data
CONSENT ..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV ..... Indian Reservations
FUSRAP ..... Formerly Utilized Sites Remedial Action Program
UMTRA ..... Uranium Mill Tailings Sites
LEAD SMELTERS ..... Lead Smelter Sites
US AIRS ..... Aerometric Information Retrieval System Facility Subsystem
US MINES ..... Mines Master Index File
ABANDONED MINES ..... Abandoned Mines
FINDS ..... Facility Index System/Facility Registry System
UXO ..... Unexploded Ordnance Sites
DOCKET HWC ..... Hazardous Waste Compliance Docket Listing
ECHO ..... Enforcement & Compliance History Information
FUELS PROGRAM ..... EPA Fuels Program Registered Listing
AIRS ..... Arizona Airs Database
Aquifer ..... Waste Water Treatment Facilities
AZ DOD ..... Department of Defense Sites
Dry Wells ..... Drywell Registration

DRYCLEANERS Drycleaner Facility Listing
EMAP All Places of Interest Listing
Enforcement Enforcement and Violation Listing
Financial Assurance Financial Assurance Information Listing
VAPOR Vapor Intrusion
UIC Underground Injection Control Wells
SPDES NPDES
WWFAC Waste Water Treatment Facilities

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Cleaner EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS Recovered Government Archive State Hazardous Waste Facilities List
RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 03/01/2018 has revealed that there are 2 RCRA-CESQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WHITE KNIGHT HEALTHC	***300 S 1ST ST***	***E 1/8 - 1/4 (0.195 mi.)***	***8***	***15***

EPA ID:: AZD982344350

Lower Elevation	Address	Direction / Distance	Map ID	Page
WALMART SUPERCENTER EPA ID:: AZR000047662	***199 W 5TH ST***	***NW 1/8 - 1/4 (0.245 mi.)***	***C11***	***19***

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Quality's LUST File Listing by Zip Code.

A review of the LUST list, as provided by EDR, and dated 09/07/2018 has revealed that there are 4 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORDER EXPRESS Date Closed: 01/02/13 Facility Id: 0-009658 Facility Status: CLOSED	***305 N PAN AMERICAN A***	***NE 0 - 1/8 (0.125 mi.)***	***B5***	***11***
DOUGLAS, CITY OF - M Date Closed: 02/20/96 Facility Id: 0-006774 Facility Status: CLOSED	***101 E 7TH ST***	***N 1/4 - 1/2 (0.284 mi.)***	***12***	***41***
TEXACO - BULK PLANT Date Closed: 08/18/98 Facility Id: 0-004251 Facility Status: CLOSED	***7TH ST PAN AMERICAN***	***NNE 1/4 - 1/2 (0.325 mi.)***	***D13***	***43***
SENOR BARRATO Facility Id: 0-006668 Facility Status: Confirmed	***560 N G AVE***	***NE 1/4 - 1/2 (0.421 mi.)***	***16***	***45***

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Quality's Arizona UST-DMS Facility and Tank Data Listing by City database.

A review of the UST list, as provided by EDR, and dated 09/07/2018 has revealed that there are 4 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
USDHS USC&BP - DOUGL Closure Type: Removal Facility Id: 0-006810 Date Closed: 12/06/1990	5 N PAN AMERICAN AVE	SE 0 - 1/8 (0.099 mi.)	A2	8
BORDER MART SHELL	***100 E 3RD ST***	***NE 0 - 1/8 (0.111 mi.)***	***B4***	***9***

Facility Id: 0-009318

BORDER EXPRESS	***305 N PAN AMERICAN A***	***NE 0 - 1/8 (0.125 mi.)***	***B5***	***11***
Closure Type: Removal Facility Id: 0-009658 Date Closed: 08/30/2012				
DOUGLAS CHEVRON	***461 N PAN AMERICAN A***	***NE 1/8 - 1/4 (0.186 mi.)***	***7***	***13***
Facility Id: 0-010052				

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the Department of Environmental Quality's Arizona UST-DMS Facility and Tank Data Listing by City database.

A review of the AST list, as provided by EDR, has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WAL-MART SUPERCENTER	199 WEST 5TH STREET	NW 1/8 - 1/4 (0.245 mi.)	C10	19
Database: AST, Date of Government Version: 08/15/2018 Facility Status: Permitted				

State and tribal institutional control / engineering control registries

AZURITE: ADEQ maintains a repository listing sites remediated under programs administered by the department.

A review of the AZURITE list, as provided by EDR, and dated 08/07/2018 has revealed that there are 2 AZURITE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PARK WEST PARTNERS W		***NNE 1/4 - 1/2 (0.376 mi.)***	***D14***	***44***
PARK WEST PARTNERS E		***NNE 1/4 - 1/2 (0.397 mi.)***	***15***	***45***

AUL: DEUR and VEMUR sites. DEUR: Declaration of Environmental Use Restriction. A restrictive land use covenant that is required when a property owner elects to use an institutional (i.e., administrative) control or engineering (i.e., physical) control as a means to meet remediation goals. The DEUR runs with and burdens the land, and requires maintenance of any institutional or engineering controls. VEMUR: Voluntary Environmental Mitigation Use Restriction. A restrictive land use covenant that, prior to July 18, 2000,was required when a property owner elected to remediate the property to non-residential uses. Effective July 18, 2000, the DEUR replaced the VEMUR as a restrictive use covenant.

A review of the AUL list, as provided by EDR, and dated 08/07/2018 has revealed that there are 2 AUL sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PARK WEST PARTNERS W		***NNE 1/4 - 1/2 (0.376 mi.)***	***D14***	***44***
Remediation ID: 31409				
PARK WEST PARTNERS E		***NNE 1/4 - 1/2 (0.397 mi.)***	***15***	***45***
Remediation ID: 31404				

State and tribal voluntary cleanup sites

VCP: Sites involved in the Voluntary Remediation Program..

A review of the VCP list, as provided by EDR, and dated 05/14/2018 has revealed that there are 2 VCP sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DOUGLAS PORT OF ENTR Date Closed: 06/28/2002 Date Closed: 08/03/2007 Facility Status: Transferred to Site Assessment Program Facility Status: Closed	1 PAN AMERICAN AVE	SE 0 - 1/8 (0.101 mi.)	A3	8

Lower Elevation	Address	Direction / Distance	Map ID	Page
DOUGLAS DEVELOPMENT Date Closed: 09/04/2014 Facility Status: Closed	SEC W. 9TH STREET &	NNW 1/4 - 1/2 (0.481 mi.)	17	47

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HAMLIN INC EPA ID:: AZD982429086	***230 INTERNATIONAL AV***	***ESE 1/8 - 1/4 (0.200 mi.)***	***9***	***17***

MANIFEST: Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

A review of the MANIFEST list, as provided by EDR, and dated 12/31/2017 has revealed that there is 1 MANIFEST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WALMART SUPERCENTER EPA Id: AZR000047662	***199 W 5TH ST***	***NW 1/8 - 1/4 (0.245 mi.)***	***C11***	***19***

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

A review of the EDR MGP list, as provided by EDR, has revealed that there is 1 EDR MGP site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DOUGLAS GAS CORPORAT	PAN AMERICAN AVE	0 - 1/8 (0.000 mi.)	1	8

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORDER EXPRESS INC	305 N PAN AMERICAN A	NE 0 - 1/8 (0.125 mi.)	B6	13

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
DOUGLAS AIRFIELD	SHWS

Appendix B
Historical Sanborn Maps and Aerial Photographs

SANBORN MAP LEGEND

CODING OF FIRE-RESISTIVE STRUCTURAL UNITS FOR FIREPROOF AND NON-COMBUSTIBLE BUILDINGS

FRAMING

CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame.
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers.
C.	Protected Steel Frame.
D.	Individually Protected Steel Joists, Columns, Beams, Trusses, Arches.
E.	Indirectly Protected Steel Frame.
F.	Indirectly Protected Steel Joists, Columns, Beams, Trusses, Arches.
G.	Unprotected Steel Frame.
H.	Unprotected Steel Joists, Columns, Beams, Trusses, Arches.
O.	Masonry Bearing Walls only.

FLOORS

CODE	STRUCTURAL UNIT
1.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Pre-cast Concrete or Gypsum Slabs or Planks.
2.	Concrete on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, or Cellular, Ribbed or Corrugated Steel Units.
3.	Open Steel Deck or Grating.

ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Reinforced Gypsum Concrete. Pre-cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, or Cellular, Ribbed or Corrugated Steel Units.
c.	Incombustible Composition Boards with or without Insulation. Masonry or Metal Tiles.
d.	Steel Deck, Corrugated Metal or Asbestos Protected Metal with or without Insulation.

The coding to left, for framing, floor and roof structural units is used in describing the construction of fire-resistive buildings. In addition, reports for fire-resistive buildings will show the date built, wall construction other than brick, and ceilings.

FP - 1962 (CONC.) A-1-a — A fireproof building built in 1962 with concrete walls and reinforced concrete frame, floors and roof.

FPX - 1962 (METAL PANELS) B-2-a (NONCOMB. CEILINGS) — A fireproof building built in 1962 with metal panel walls, reinforced concrete columns and beams, concrete floors on metal lath and gypsum slab roof; non-combustible ceilings.

NC - 1962 (C. B.) H-2-d — A noncombustible building built in 1962 with concrete block walls; unprotected steel columns, beams and joists; concrete floors on metal lath and steel deck roof.

MASONRY CONSTRUCTION

Important interior and all exterior masonry walls of all non-residential buildings and residential buildings of five or more dwelling units are shown with weighted (——) lines.

Masonry walls of residential buildings of four dwelling units or less are shown with a standard line and the construction is noted on all buildings diagramed after July, 1963.

WALLS

- 8" Brick
- 12" Concrete
- 18" & 20" Stone
- 12" & 8" Hollow Tile Wall Thicknesses Placed Relative to Respective Floors
- Cinder, Concrete or Cement Brick
- Hollow Cinder or Concrete Blocks, Plastered
- Mixed Construction of Concrete Blocks, Brick Faced
- Mixed Construction of Concrete Blocks & Brick
- Masonry Walls, Metal Faced
- Adobe
- Hollow Cinder or Concrete Block Interior Wall Basement to Roof
- Tile Interior Wall Basement to Roof
- Cement Brick End Wall

PARTITIONS

- Frame
- Tile from Foundation to Top Ceiling only
- Concrete 1st Floor only
- Hollow Cinder or Concrete Block 1st Floor only
- Brick 2nd Floor only
- Tile 1st & 3rd Floors only

OPENINGS

(Interior)

- Wall with No Openings
- Wall with Double Standard Fire Doors 1st Floor
- Wall with Standard Fire Door Basement
- Wall with Substandard Fire Doors 1st & 3rd Floors
- Wall with Metal & Wired Glass Fire Doors all Floors
- Wall with Substandard Fire Doors 1st, 2nd & 3rd Floors & Unprotected Opening 4th Floor
- Wall with Small Unprotected Openings only
- Wall with Unprotected Openings all Floors

(Exterior)

- 1st Floor
- 1st & 2nd Floors
- 3rd Floor
- 1st & 4th Fl. with Metal Shutter 1st.
- 10th & 22nd only
- 10th to 22nd Fl.
- Glass Block
- Wired Glass in Metal Sash 2nd & 3rd Fl.

NON-MASONRY CONSTRUCTION

Non-masonry walls are shown with fine (———) lines.
(Wall construction other than wood and stucco on wood frame is noted)

- Wood & Stucco & Cement Plaster, Etc. on Wood Frame
- Brick Veneered on Wood Frame (Other Types of Veneered on Wood Frame Specifically Noted)
- Mixed Masonry & Non-Masonry (Type of Masonry Specifically Noted)
- Wood, Brick Lined, Br. Filled or Brick Nogged
- Wood Sash & Glass
- Metal Sash & Glass
- Metal Clad on Wood Frame
- Iron Building
- Iron Building with Wood Roof. (Location of Extensive Wood Areas Specifically noted)
- Asbestos Clad on Wood Frame, Noted in Non-Residential Structures only.
- Mixed Wall--0' of CB with Metal Sash Above
- Metal Panels
- Apron Walls With Wood Sash and Glass
- Stucco, Cement Plaster, Etc. on Steel Frame
- Asphalt and/or Asbestos Protected Metal on Steel Frame
- Asphalt and/or Asbestos Protected Metal on Wood Frame
- Glass Panels

GLOSSARY

A - B LINES An arbitrary boundary between adjoining sheets.
A. Private garage.
ABV. Above.
A.F.A. Equipped with fire detecting devices which automatically signal a central fire department.
AIR COND. Air cooling system employing ducts through floors.
APRON WALL. A masonry wall extending 5' or less above foundation.
ASSC. RISK Risk not underwritten by Stock Fire Ins. Companies.
BASEMENT A story having its floor below ground & its ceiling at least 4' above ground.
Cook County, Ill.: A floor of a building next below the first floor. Shown by the symbol B following story height. Sub-basements or sub-cellars, (stories below the 1st basement), are shown by the symbol SB following basement symbol.
CHIMNEYS (Applicable to maps in Rocky Mountain & Pacific Coast States)
BC. Brick, stone, concrete brick & concrete chimneys.
C.BL.C. Concrete block chimney.
C.C. Non-standard concrete chimney.
T.C. Tile chimney.
P.C. Patent chimney.
IR. CH. Iron chimneys.
S.P. Stove pipe.
S.P.V. Stove pipe with patent ventilator.

RESIDENTIAL OCCUPANCY SYMBOLS
D. Single family unit or as qualified by a numeral.
F. - APTS. A multi-family residential building corresponding with local Rating Bureau definition in family units per floor, story height, & separation of entrance.
ROOM'G. A residential building normally occupied by a single family but with 10 or more rooms rented for lodging purposes.
EXCEPTIONS: 6 rooms in Arizona, California, Nevada, Utah & Montana; 5 rooms in Oregon & Washington; 4 rooms in Idaho & Hawaii.

FIRE RESISTIVE CONSTRUCTION SYMBOLS
F.P. Approved masonry walls, floors & roof, interior supports of approved masonry, concrete, and/or protected steel.
F.P.X. F. P. qualifications except inferior or sub-standard walls.
N.C. Fire resistive with unprotected structural steel units.
HOLLOW WALL. A bonded masonry wall having a continuous air space within.
I.E.P. Independent Electric Plant.
IMPASSABLE Not traversable due to condition of terrain.
LEDGED WALL. A masonry bearing wall with extended ledges to support floors.
LOFT Tenanted by industrial occupancies.
M.L. & P. Concrete or plaster applied to metal lath on wood studdings.
M.S. & G. Metal sash & glass.
NOT OPEN Streets appearing on records but not open on ground.
O.L. Windows overlooking the roof above the corresponding floor of an adjoining building.
O.U. Open between ground and first floor.
PILAST'D. Masonry reinforcing columns in walls.
SKYTS. Skylights.
SL. CL. Slate attached to wood siding.
SM. HO. Smoke House.
STABLE Shown by crossing diagonal lines on diagram.
SUSP'D. Suspended ceilings below floor and/or roof beams.
SYST. System.
TRANSF. Transformer.
WD. Wood.

RT	Residential · Transient	P	Public or Institutional
C	Commercial	U	Utility
W	Warehouse	T	Transportation

FIRE PROTECTION

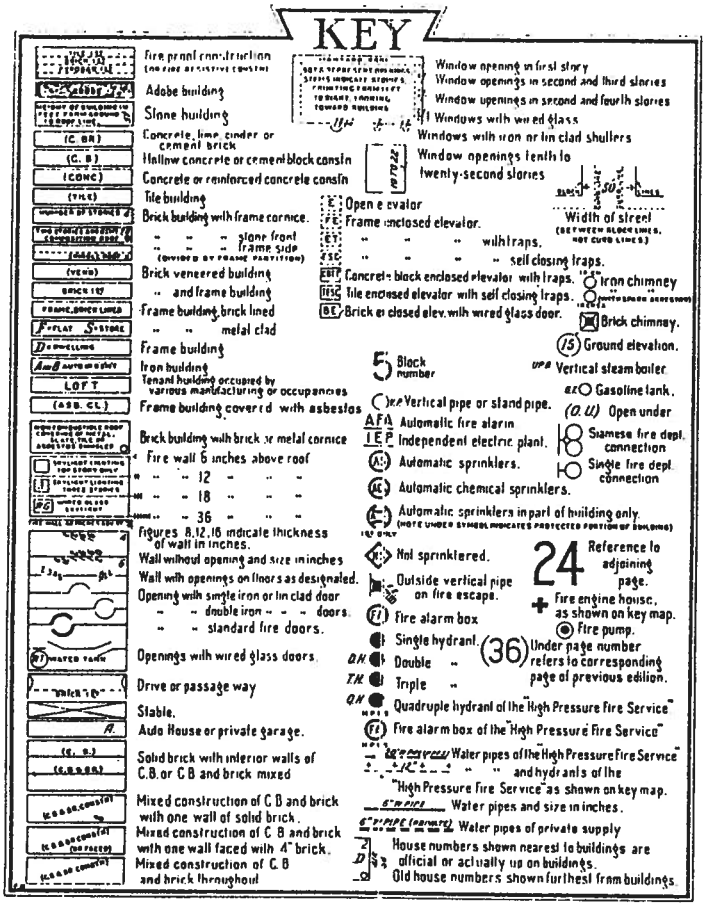
- Fire Department Connection
- Automatic Sprinklers throughout contiguous sections of single risk (THRU-OUT)
- Automatic Sprinklers all floors of building
- Automatic Sprinklers in part of building only (Note under Symbol indicates protected portion of building) (1ST ONLY)
- Not Sprinklered
- Automatic Chemical Sprinklers
- Chemical Sprinklers in part of building only (Note under Symbol indicates protected portion of building)
- VP HYD. Vertical Pipe or Stand Pipe
- AFA Automatic Fire Alarm
- Water Tank
- Outside Vertical Pipe on fire escape
- Fire Alarm Box Noted "HPFS" on High Pressure Fire Service
- Single Hydrant
- D.H. Double Hydrant
- T.H. Triple Hydrant
- Q.H. Quadruple Hydrant of the High Pressure Service (H.P.F.S)
- Water Pipes of the High Pressure Service
- Water Pipes of the High Pressure Service as Shown on Key Map
- 6" W.P. Public Water Service
- 6" W.P. (PRIV.) Private Water Service

VERTICAL OPENINGS

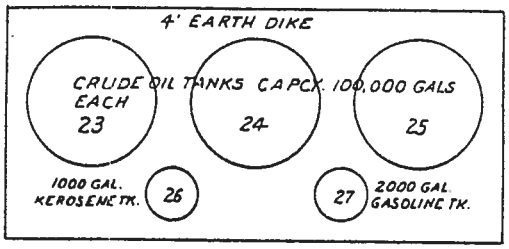
- Skylight lighting top story only
- Skylight lighting 3 stories
- Skylight with Wired Glass in Metal Sash
- Open Elevator
- Frame Enclosed Elevator
- Frame Enclosed Elevator with Traps
- Frame Enclosed Elevator with Self Closing Traps
- Concrete Block Enclosed Elevator with Traps
- Tile Enclosed Elevator with Self Closing Traps
- Brick Enclosed Elevator with Wired Glass Door
- Open Hoist
- Hoist with Traps
- Open Hoist Basement to 1st
- Stairs

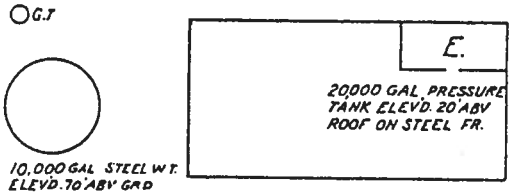
MISCELLANEOUS

- Number of Stories, Height in Feet, Composition Roof Covering
- Parapet 6" above Roof, Frame Cornice, Parapet 12" above Roof
- Parapet 24" above Roof, Occupied by Warehouse, Metal, Slate, Tile or Asbestos Shingle Roof Covering, Parapet 48" above Roof
- 2 Stories & Basement, 1st Floor Occupied by Store, 2 Residential Units above 1st, Auto in Basement, Drive or Passageway, Wood Shingle Roof.
- IR. CH. Iron Chimney
- IR. CH. S.A. Iron Chimney (with Spark Arrestor)
- V.P.B. Vertical Steam Boiler
- Horizontal Steam Boiler
- Brick Chimney
- G.T. Gasoline Tank
- Fire Pump
- Width of Street between Block Lines, not Curb Lines
- Ground Elevation
- House numbers nearest to Buildings are Official or Actually up on Buildings. Old House Numbers are Farthest from Buildings
- 24 Reference to Adjoining Page
- 5 Block Number
- Fire Department as shown on Key Map
- Vac. or V. - Vacant
- Vac. & Op. or V.-O. - Vacant & Open



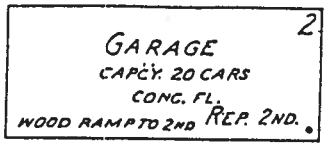
TANKS G.T. ○ Gasoline Tank

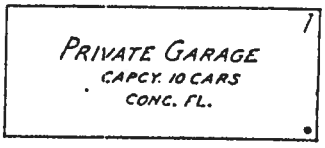




FUEL OIL LINE

○ Fire Cistern
CISTERN





CODING OF STRUCTURAL UNITS FOR FIREPROOF AND NON-COMBUSTIBLE BUILDINGS

FRAMING

CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame.
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers.
C.	Protected Steel Frame.
D.	Individually Protected Steel Joists, Columns, Beams, Trusses, Arches.
E.	Indirectly Protected Steel Frame.
F.	Indirectly Protected Steel Joists, Columns, Beams, Trusses, Arches.
G.	Unprotected Steel Frame.
H.	Unprotected Steel Joists, Columns, Beams, Trusses, Arches.
O.	Masonry Bearing Walls.

FLOORS

CODE	STRUCTURAL UNIT
1.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Pre-cast Concrete or Gypsum Slabs or Planks.
2.	Concrete on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
3.	Open Steel Deck or Grating.

LAND USE CODE APPLICABLE TO CHANGES DIAGRAMMED AFTER 5/60

R	RESIDENTIAL	M	MANUFACTURING
RT	RESIDENTIAL - TRANSIENT	P	PUBLIC OR INSTITUTIONAL
C	COMMERCIAL	U	UTILITY
W	WAREHOUSE	T	TRANSPORTATION

NUMERICAL PREFIX INDICATES THE NUMBER OF ESTABLISHMENTS IN EACH CATEGORY

ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Reinforced Gypsum Concrete. Pre-cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
c.	Incombustible Composition Boards with or without Insulation. Masonry or Metal Tiles.
d.	Steel Deck, Corrugated Metal or Asbestos Protected Metal with or without Insulation.

The coding for framing, floor and roof structural units as shown above is used in describing the construction of fire-resistive buildings. In addition, reports for fire-resistive buildings will show the date built and wall construction when other than brick.

F P buildings have masonry floors and roof; concrete and/or directly or indirectly protected steel framing; and clay brick, stone or poured concrete walls.

F P X buildings are F P buildings with inferior walls such as concrete block, cement brick, metal or glass panels, etc.

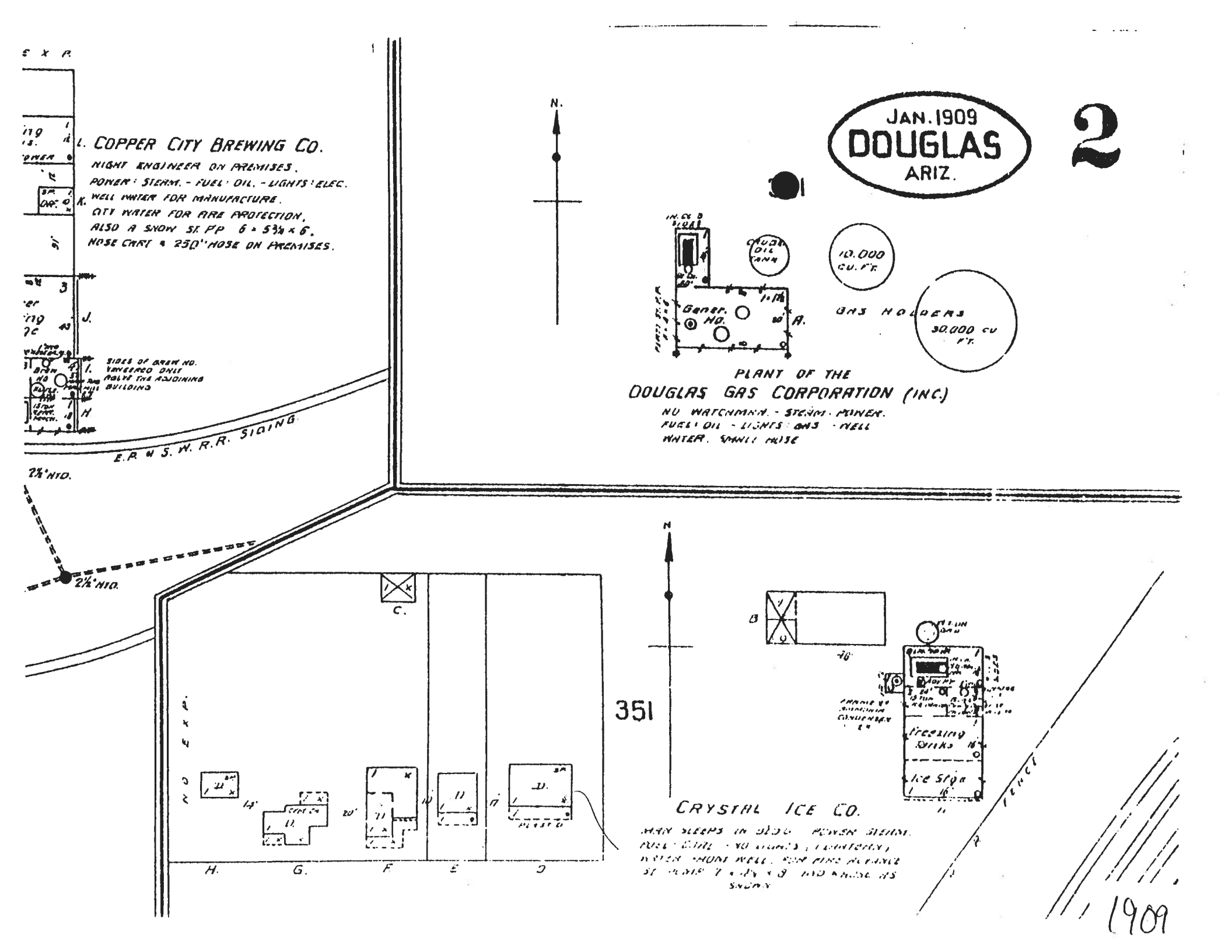
N C buildings have unprotected steel framing and fire-resistive but non-masonry floors and roof.

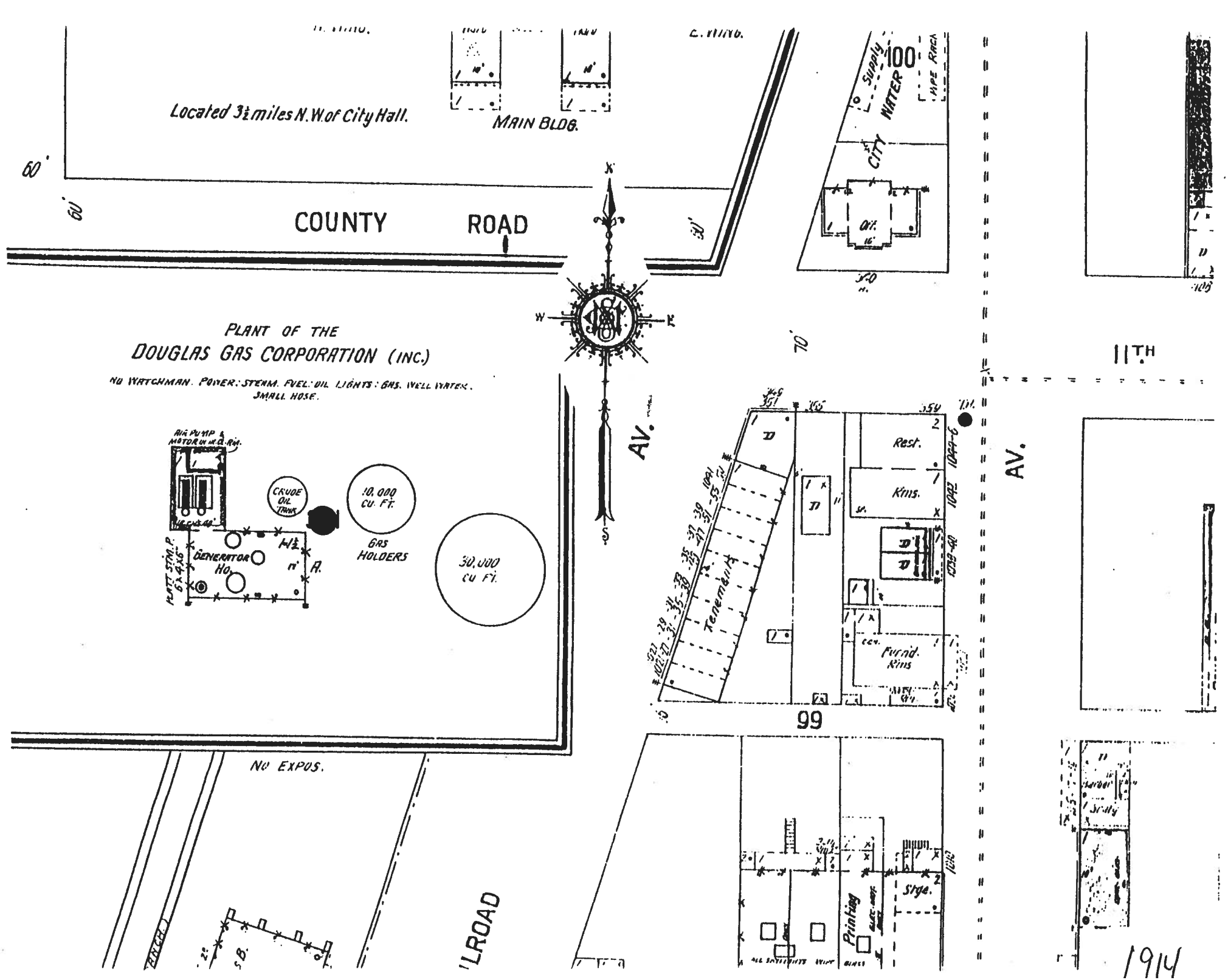
FP-1962 (CONC.) A-1-a — A fire-resistive building built in 1962 with concrete walls and reinforced concrete frame, floors and roof.

FPX-1962 (METAL PANELS) I E-2-b NONCOMB CEILS — A fire-resistive building built in 1962 with metal panel walls, indirectly protected steel frame, concrete floors and roof on metal lath, noncombustible ceilings.

NC-1962 "(C. B.)" H-2-d — A noncombustible building built in 1962 with concrete block walls; unprotected steel columns and beams; concrete floors on metal lath and steel deck roof.

5-62


JAN. 1909
DOUGLAS
ARIZ.
2
L. COPPER CITY BREWING CO.
NIGHT ENGINEER ON PREMISES.
POWER: STEAM. - FUEL: OIL. - LIGHTS: ELEC.
WELL WATER FOR MANUFACTURE.
CITY WATER FOR FIRE PROTECTION.
ALSO A SNOW ST. PP 6 x 5¾ x 6.
HOSE CART & 250" HOSE ON PREMISES.
SIDES OF BREW HO. VENEERED ONLY ABOVE THE ADJOINING BUILDING
E.P. & S.W. R.R. SIDING
2½" HYD.
2½" HYD.
N.
Gener. HO.
A.
10,000 CU. FT.
GAS HOLDERS
30,000 CU FT.
PLANT OF THE
DOUGLAS GAS CORPORATION (INC.)
NO WATCHMAN. - STEAM. POWER.
FUEL: OIL - LIGHTS: GAS - WELL
WATER. SMALL HOSE
C.
B
351
Freezing Tanks
Ice Stg.
CRYSTAL ICE CO.
H.
G.
F
E
D
1909



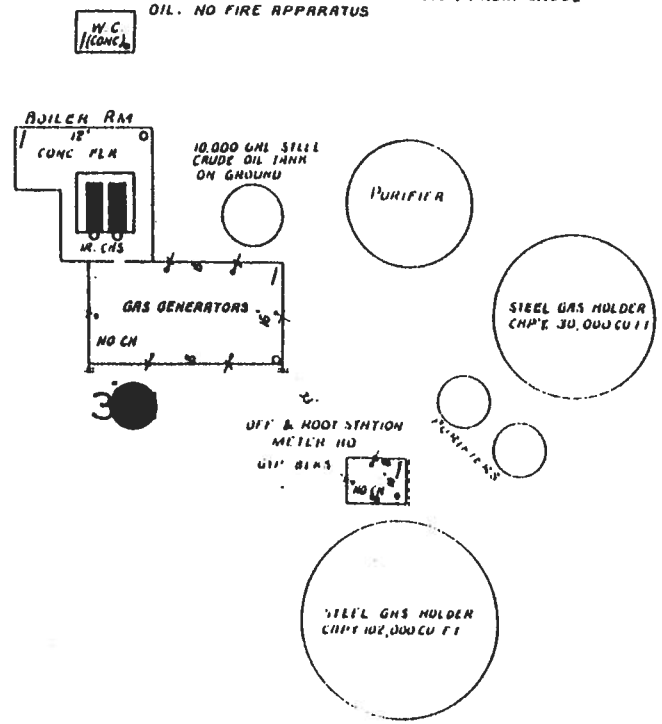
Located 3½ miles N.W. of City Hall.
MAIN BLDG.
COUNTY ROAD
PLANT OF THE
DOUGLAS GAS CORPORATION (INC.)
NO WATCHMAN. POWER: STEAM. FUEL: OIL LIGHTS: GAS. WELL WATER.
SMALL HOSE.
AIR PUMP & MOTOR IN M.O. RM.
CRUDE OIL TANK
10,000 CU. FT.
GAS HOLDERS
30,000 CU. FT.
GENERATOR HO.
PLATT STM. P. 6 x 4 x 6
NO EXPOS.
AV.
AV.
11TH
100
Supply
CITY WATER
Rest.
Rms.
Tenement
Furnd. Rms
99
Printing
Stge.
ILROAD
1914

THIS SECTION IS NOT
WITHIN CITY LIMITS

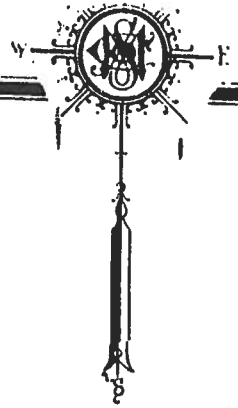
ARIZONA EDISON CO'S GAS WORKS

FOR LOCATION SEE KEY MAP

IN OPERATION DAY & NIGHT - POWER. STEAM - FUEL; OIL - LIGHTS; ELEC. GAS GENERATOR FROM CRUDE OIL. NO FIRE APPARATUS



1929

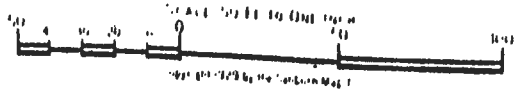


THIS SECTION IS NOT
WITHIN CITY LIMITS

Formerly ARIZONA EDISON Co's GAS WORKS
FOR LOCATION SEE KEY MAP
PLANT DISMANTLED & ALL BLDGS REMOVED

PURIFIER
VAC.

61



1947

Appendix C
Work Plan for Pre-design Testing Investigation

Work Plan for APS Former Manufactured Gas Plant Site, Douglas Arizona

Final

August 2019

Arizona Public Service

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name:	APS Douglas Former MGP Site	VRP Site Code:	Unassigned
Volunteer/Applicant Name:	Arizona Public Service		
Volunteer/Applicant Email Address and Phone:	judith.heywood@aps.com, 480/250-3850		
Authorized Agent (AA)/Consulting Company:	Jacobs		
AA/Consultant Email Address and Phone:	dave.allard@jacobs.com, 480/295-3913		

Reference	Summary of Statutory Requirement (please review all statutes in their entirety to ensure compliance)	Page(s) Where Addressed in Work Plan (write N/A if not applicable)	VRP Use Only
§49-175A.1	Summary of existing site characterization and assessment information; information regarding any remediation previously conducted; copies of referenced reports not previously submitted;	Section 2, Pages 2-1 through 2-15	☐
§49-175A.2	If the site has not been characterized, a plan to conduct site characterization and a schedule for completion.	Section 3, Pages 3-1 through 3-7, Figure 3-2	☐
§49-175A.3.a	If site characterization is completed, a description of how the remediation will comply with §49-175B ("Work Plans") and how the completion of remediation will be verified. A schedule for completion must be included.	N/A, Site characterization not completed	☐
§49-175A.3.b	If site characterization is completed, the work plan may provide for the remediation to be conducted in phases or tasks. A schedule for completion must be included.	N/A, Site characterization not completed	☐
§49-175A.4	Schedule for submission of progress reports.	Figure 3-2: Project Schedule	☐
§49-175A.5	A proposal for community involvement as prescribed by §49-176 ("Community Involvement Requirements")	Section 5	☐
§49-175A.6	If known, a list of institutional or engineering controls necessary during remediation and after completion of the proposed remediation to control exposure to contaminants.	N/A, Site characterization not completed	☐
§49-175A.7	A proposal for monitoring during remediation and after the remediation if necessary to verify whether the approved remediation levels or controls have been attained and will be maintained.	N/A, Site characterization not completed	☐
§49-175A.8	A list of any permits or legal requirements known to apply to the work or already performed by the applicant.	N/A	☐
§49-175A.9	If requested by the department, information regarding the financial capability of the applicant to conduct the work identified in the application. *(IF APPLICABLE)*	N/A	☐

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: APS Douglas Former MGP Site VRP Site Code: Unassigned

Reference	Summary of Statutory Requirement (please review all statutes in their entirety to ensure compliance)	Page(s) Where Addressed in Work Plan (write N/A if not applicable)	VRP Use Only
§49-175B	Remediation levels or controls for remediation conducted pursuant to this article shall be established in accordance with rules adopted pursuant to §49-282.06 unless one or more of the following applies: see §49-175B.1 through §49-175B.4, below.	Section 3.1.2, Pages 3-4 though 3-6.	☐
§49-175B.1	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of contaminated soil comply with §49-152 and the rules adopted.	N/A	☐
§49-175B.2	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of landfills or other facilities that contain materials that are not subject to §49-152 (i.e.: asbestos) do not exceed a cumulative excess lifetime cancer risk between $1X10^{-4}$ to $1X10^{-6}$, and a hazard index of no greater than 1.	N/A	☐
§49-175B.3	The applicant demonstrates that on achieving remediation levels or controls for a source or potential source of contamination to a navigable water, the source of contamination will not cause or contribute to an exceedance of surface water quality standards, or if a permit is required pursuant to 33 United States Code §1342 for any discharge from the source, that any discharges from the source will comply with the permit.	N/A	☐
§49-175B.4	The applicant demonstrates that, on achieving remediation levels or controls for a source of contamination to an aquifer, the source will not cause or contribute to an exceedance of aquifer water quality standards (AWQS) beyond the boundary of the facility where the source is located.	N/A	☐
§49-175C	The VRP may waive any work plan requirement under this section that it determines to be unnecessary to make any of the determinations required under §49-177. *If any waivers are requested in the Work Plan or have been previously requested and approved by the VRP, cite them in the Work Plan, including a citation of the statute for which the waiver applies.*	N/A	☐

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: APS Douglas Former MGP Site VRP Site Code: Unassigned

To support the prerequisites established by A.R.S. §49-177 and §49-180, the VRP expects certain documentation to accompany a Work Plan. The following provides a list of attachments/exhibits which are recommended for submittal with a Work Plan to provide the information required by the statutes.

Work Plan Information	Title of Figure/Table/Attachment/Exhibit Where Requested Information is Cited (write N/A if not applicable)	Figure/Table/ Attachment or Report Page Number (write N/A if not applicable)	VRP Use Only
Site Location Map *(topographic or aerial)*	Site Location Map	Figure 1-1	☐
Site Map *(to scale)*	Former Structures Map	Figure 1-2	☐
Historical Sampling Data Table	Summary of Historical Analytical Data for Soil	Tables 2-1 though 2-4	☐
Historical Sample Location Map (to scale)	Previous Investigation Sample Locations	Figure 2-1	☐
Proposed Sample Location Map (to scale)	Proposed Boring Locations	Figure 3-1	☐
Sampling and Analysis Plan (includes Field Sampling Plan & Quality Assurance Plan)	Sampling and Analysis Plan	Section 4, Pages 4-1 through 4-7	☐
Proposed Remediation System Location Map	N/A, Site characterization not completed		☐
Proposed Remediation System Layout (Design Drawings)	N/A, Site characterization not completed		☐
Schedule for Implementation of Project Activities* (Gantt Style Chart)	Project Schedule	Figure 3-2: Project Schedule	☐
*Project Activities are defined in A.R.S. §§49-175A.2 through 49-175A.4, and 49-176A.2 (Community Involvement).			
Proposed Language for Public Notification of Remediation (i.e.: example signage)	N/A, Site characterization not completed		☐
Plan for Investigative Derived Waste (IDW)	Sampling and Analysis Plan - Investigation-derived Waste	Section 4.1.4, Page 4-3	☐
Evaluation of Remedial Alternatives (i.e: for Feasibility Study Work Plan)	N/A, Site characterization not completed		☐

DOES THE WORK PLAN PROPOSE IMPLEMENTING SITE-SPECIFIC REMEDIATION LEVELS?

Yes	No
☐	☑

DOES THE WORK PLAN PROPOSE EVALUATION OF BACKGROUND LEVELS?

Yes	No
☑	☐

NOTE: When reports are submitted which document any type of sampling activity, the submittal of Electronic Data per ADEQ's *Groundwater Data Submittal Guidance (V3.4)* is strongly recommended.

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Acronyms and Abbreviations

°C	degrees Celsius
A.R.S.	Arizona Revised Statute
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
APS	Arizona Public Service Company
AST	aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CESQG	conditionally exempt small quantity generator
CWG	carbureted water gas
ECHO	enforcement and compliance history information
EDR	Environmental Data Resources
EMAP	all places of interest
EPA	U.S. Environmental Protection Agency
ERI	Environmental Response, Inc.
FINDS	facility index system/facility registry system
ft^3	cubic foot (feet)
GPL	groundwater protection level
ID	identification
IDW	investigation-derived waste
IRA	interim removal action
LUST	leaking underground storage tank
mg/kg	milligram(s) per kilogram
mg/L	milligram(s) per liter
MGP	manufactured gas plant
MS	matrix spike
MSD	matrix spike duplicate
PAH	polynuclear aromatic hydrocarbon
PCS	petroleum-contaminated soil
PID	photoionization detector
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RAP	remedial action plan
RCRA	Resource Conservation and Recovery Act of 1976
SRL	soil remediation level

SVOC	semivolatile organic compound
TCLP	Toxicity Characteristic Leaching Procedure
TPH	total petroleum hydrocarbon
UST	underground storage tank
UTL95-95	95/95 upper tolerance limit
VCP	Voluntary Cleanup Priorities
VOC	volatile organic compound

1. Introduction

The Arizona Public Service Company (APS) is proposing to conduct remediation activities at the former manufactured gas plant (MGP) site (the Site) in the City of Douglas, Arizona, under the Arizona Department of Environmental Quality's (ADEQ's) Voluntary Remediation Program in support of future development of the Site. As an initial step, APS completed an assessment of historical site data, which is summarized in the site history report (Jacobs, 2019a), and describes the Site and its history, including former operations and industrial activities, environmental issues, and previous site investigations.

The Site is located near the intersection of East 3rd Street and Pan American Avenue in the City of Douglas (Figure 1-1), in Cochise County, Section 13, Township 24 South, Range 27 East, Douglas, Arizona U.S. Geological Survey 7.5-Minute Topographic Quadrangle. The Site is approximately 200 yards north of the international border between the United States and Mexico.

The properties adjacent to the western Site boundary are owned by El Paso Natural Gas and a private landowner. The land adjacent to the northern, eastern, and southern Site boundaries are owned by private landowners. The area to the north of the Site is characterized by trees and a small wash. The area to the east of the Site contains a walkway from the United States-Mexico border to East 3rd Street, which is used by approximately 3,000 pedestrians per day. The area to the south of the Site is undeveloped land primarily used by the U.S. Border Patrol. The area to the west of the Site is largely undeveloped except for an El Paso natural gas metering station and a buried natural gas line.

The Site was formerly owned by Arizona Edison Company Gas Works, APS's predecessor company (EDR, 2018). The MGP was at the Site from approximately 1905 through 1947 and operated until at least the early 1930s. The Site is owned by the City of Douglas and is crossed by an El Paso Natural Gas easement. The City of Douglas uses the property to store construction debris consisting of soil, gravel, asphalt, and concrete. An operational history of the site is provided in Table 1-1.

A map showing the approximate locations of structures and other features associated with the former MGP that were identified based on Sanborn fire insurance maps and previous site investigation reports is shown on Figure 1-2. Figure 1-3 shows the property parcels in relation to former MGP operations based on historical reports.

According to the findings of the previous investigations, as summarized in this Site Investigation Work Plan, six subsurface MGP-related structures remain at the Site, and compounds related to the former MGP operations have impacted the subsurface soil. As a result, the Site requires additional investigation and remedial activities prior to future property development.

1.1 Objectives

According to the findings of the previous investigations, compounds related to former MGP operations remain above Arizona soil remediation levels. As a result, the Site requires additional investigation to further define the extent of impacts and guide remedial activities. The objectives of the site investigation described in this Work Plan are as follows:

- Complete the characterization of the vertical and lateral extents of soil impacts.
- Evaluate potential groundwater impacts.
- Determine the locations of the remaining subsurface structures.
- Collect data to develop a remedial action plan (RAP) consistent with Arizona soil remediation levels (SRLs) and groundwater protection levels (GPLs).

1.2 Organization

This Site Investigation Work Plan has been prepared in accordance with the ADEQ *Voluntary Remediation Program Work Plan Checklist.* The Work Plan includes the following sections:

- **Section 2, Site Description, Background, and Data Gaps**, includes the Site history, including a description of MGP operations; summaries of previous site investigations; description of the Site geology, hydrogeology, and hydrology; and a discussion of the remaining data gaps that have been identified at the Site.
- **Section 3, Proposed Investigation Activities**, describes the proposed soil sampling locations and analyses. This section also includes a proposed project schedule for investigation activities.
- **Section 4, Sampling and Analysis Plan**, describes the field sampling procedures and laboratory analysis and procedures for sample management, chain of custody, and record keeping.
- **Section 5, Public Notice and Public Participation**, describes the procedures APS will use to implement the community relations and ongoing public involvement program during investigative activities.
- **Section 6, References**, includes the references that were used to prepare this Work Plan.

2. Site Description, Background, and Data Gaps

This section presents the history of the Site, a site description, surrounding environmental issues, a summary of the MGP process and wastes, and a summary of previous investigations and data gaps.

2.1 Site Description

The geology and hydrogeology of the Site is described in this section (Geraghty and Miller, 1996a).

2.1.1 Geology

The Site is situated in the Douglas Basin of southeastern Arizona at an elevation of approximately 3,950 feet above mean sea level and lies within the Basin and Range Province in the Sulphur Springs valley. Soils from the ground surface to 5 feet below ground surface (bgs) are generally classified as coarse grained with gravels, gravels with fines, and clayey gravel (EDR, 2018). Based on the most recent site investigation, soils were classified from the center of the Site (SB-4) as silt and sand from ground surface to 3 feet bgs, clay with silt and sand from 3 to 7.5 feet bgs, a mix of clayey silt, silt, sand, and clay from 7.5 to 15 feet bgs, and medium coarse sand from 15 to 16.5 feet bgs (Geraghty and Miller, 1996a).

2.1.2 Hydrogeology

In 1990, groundwater levels within a 2-mile radius of the Site ranged from 46 to 284 feet bgs (Rascona, 1993). Small perched water zones occur locally in the upper alluvial deposits and likely account for the large variation of water levels. According to the Arizona Department of Water Resources, groundwater below the Site may be perched and is likely to be encountered at a depth of approximately 50 feet, with the direction of groundwater flow below the Site unknown because of limited data (Rascona, 1993).

2.1.3 Surrounding Environmental Issues

2.1.3.1 Local Smelting Operations

The Calumet & Arizona Company and Phelps-Dodge Corporation Reduction Works operated two copper smelters approximately 1 mile west of the Site from 1904 to 1931 and 1931 to 1987, respectively (ATSDR, 1995). During the smelting process, metal ores were heated, producing molten metals and releasing sulfur dioxide and particulate matter through two 600-foot stacks. ADEQ initiated comprehensive air monitoring in 1967 and found elevated levels of sulfates, arsenic, and lead particulates in outdoor air in Douglas. Prevailing winds generally blew toward the south and north-northeast. The smelter had a history of exceeding the U.S. Environmental Protection Agency (EPA) National Ambient Air Quality Standards allowable stack emission rates for particulate matter and sulfur dioxide gas, which led to closure of the smelter in 1987.

In 1985 the Arizona Department of Health Services collected 52 offsite (off the reduction works property) surface samples from a widespread area in Douglas to determine background lead concentrations in Douglas. Lead concentrations in Douglas ranged from 50 to 1,170 milligrams per kilogram (mg/kg), with an average lead concentration in Douglas of 254 mg/kg. The Agency for Toxic Substances and Disease Registry (ATSDR) also reported offsite maximum and mean background arsenic concentrations of 35.8 and 15 mg/kg, respectively, for surface samples located from 1 to 6 miles from the smelter site. Section 2.5 provides a detailed background metals discussion based on the ATSDR report (ATSDR, 1995).

2.3.1.2 EDR Search

Environmental Data Resources (EDR) completed a search of available environmental databases for the Site and the surrounding area. The executive summary for the EDR report (EDR, 2018), including a listing of databases searched, is presented in Appendix B.

The Site was identified on the EDR proprietary database for former MGP sites. EDR included 13 additional findings within 1/4 mile of the Site. The findings were included on the following environmental database lists:

- AST—Aboveground Storage Tank Listing
- AUL—Activity and Use Limitations list, also known as Declaration of Environmental Use Restriction
- AZURITE—ADEQ-maintained repository of sites remediated under ADEQ programs
- ECHO—Enforcement and Compliance History Information
- EMAP—All Places of Interest Listing
- FINDS—Facility Index System/Facility Registry System
- LUST—Leaking Underground Storage Tank Listing
- MANIFEST—Hazardous waste manifest information
- RCRA-CESQG— Resource Conservation and Recovery Act Conditionally Exempt Small Quantity Generator
- UST—Underground Storage Tank Listing
- VCP—Voluntary Cleanup Priorities Listing (i.e., voluntary remediation sites)

Seven of the findings were located within 1/8 mile of the Site, with four of the associated facilities having reported releases and/or violations. The companies and/or generators associated with the listings are presented below, along with a summary of the key findings:

Releases or Enforcement Actions

- **Border Express**, 305 Pan American Avenue – LUST, UST, EMAP, Enforcement

Border Express is a commercial fueling station approximately 0.1 mile northeast (upgradient) of the Site. The station had an 18,000-gallon single-walled fiberglass UST that was installed in 2000 and reported as a LUST in 2012. The UST was removed, the soil was remediated to Tier 1 standards, and the incident was closed in 2013.

- **Douglas Port of Entry**, 1 Pan American Avenue – VCP

Douglas Port of Entry is the Border Port of Entry for Mexico, located approximately 0.1 mile southeast (upgradient) of the Site. The facility was included on the VCP list for potential heating oil groundwater contamination from a former UST. A Groundwater No Further Action was issued by ADEQ in 2007 based on benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbon (TPH)-diesel concentrations achieving remediation levels.

- **U.S. Station Department Homeland Security Border**, 5 N. Pan American Avenue – UST

The Border Station is located approximately 0.1 mile southeast (upgradient) of the Site. It had a UST installed in 1934 and removed in 1990. No impacts to groundwater have been identified.

- **Border Mart** Shell, 100 E. 3rd Street – UST, EMAP, Enforcement, Financial Assurance

Border Mart Shell is a commercial fueling station approximately 0.1 mile northeast (upgradient) of the Site. The facility has two double-walled 12,000-gallon petroleum USTs that were installed in 1997. The facility received enforcement notices for violations in 2008 and 2013; the notices have been closed. No environmental releases have been reported.

- **Douglas Chevron**, 46 N. Pan American Avenue – UST, EMAP, Enforcement, Financial Assurance

Douglas Chevron is a commercial fueling station on the corner of U.S. Highway 191 and 5th Street, approximately 0.2 mile northeast (hydrologically upgradient) of the Site. The station has two 15,000-

gallon USTs installed in 2004 for gasoline and diesel. The facility had reported violations in 2006, 2008, 2013 and 2016. All cases were closed and none resulted in further investigation. Other Environmental Database Findings

- **White Knight Healthcare, Inc**., 300 S. 1st Street – RCRA-CESQG, FINDS, ECHO

White Knight Healthcare is a commercial disposable healthcare equipment manufacturing company located upgradient of the Site, approximately 0.2 mile east (upgradient). It is a CESQG. No violations or releases have been reported.

- **Hamlin, Inc.**, 230 International Ave. – RCRA Nongen, FINDS, ECHO

Hamlin Inc. registered with the FINDS database in 1990 and is a RCRA non-generator. No violations or release have been reported.

- **Walmart**, 199 West 5th Street – AST, RCRA-CESQG, EMAP, MANIFEST

Walmart is located approximately 0.25 mile north of the Site (hydrologically downgradient). It is a CESQG with an AST installed in 2004. No violations or releases have been reported.

2.2 Douglas MGP Site History

The history of the Site, a description of MGP processes and waste, and the environmental issues are presented in this section and summarized in Table 1-1. Historical information about the Site was obtained from the following documents:

- *Site Investigation, Former Manufactured Gas Plant, Douglas, Arizona (*Geraghty & Miller, 1996a)
- *Composite Soil Sampling, Former Manufactured Gas Plant, Douglas, Arizona* (Geraghty and Miller, 1996b)
- *Material Removal Activities, Former APS Manufactured Gas Plant Site, Douglas, Arizona* (Arcadis/Geraghty & Miller, 1998)

Additionally, copies of the following Sanborn fire insurance maps and EDR report were reviewed:

- Sanborn Fire Insurance Maps – 1909, 1914, 1929, and 1947 (Appendix A; Geraghty & Miller, 1996a)
- Aerial Photographs – 1958, 1970, 1979, 1984, 1992, 2003, 2007, 2010, and 2017 (EDR, 2018)

2.2.1 Site Ownership and Operational History

Geraghty & Miller Inc. reviewed Sanborn Insurance Maps from 1909, 1914, 1929, and 1947 and gas production statistics from the Brown's Directory of American Gas Companies (Brown's Directory) for select years from 1906 through 1932 to develop an operational history of the Site. Historical information in this section was obtained from aerial photographs provided by EDR (EDR, 2018) and from the investigation reports listed previously, including the historical Sanborn maps. A summary of the operational history of the Site is presented in Table 1-1.

The Site began operation as a municipal MGP between 1903 and 1908 and continued until the early 1930s, primarily using oil as the feedstock. The Douglas Gas Corporation operated the MGP until 1925. Sanborn maps indicate that the MGP was operated by Arizona Edison Company, a corporate predecessor of APS, from 1925 until it ceased production around 1932. APS sold the property to a private landowner in 1966. The City of Douglas acquired the property in 1987. The 1929 Sanborn map shows the relative locations of the former MGP structures. The 1947 Sanborn map shows the Site as mostly vacant, with the former concrete storage shed, purifier, and the concrete meter house still present. Based on information from the *Brown's Directory of American Gas Companies* (Brown's Directory), 13,700,000 cubic feet (ft^3) of gas was manufactured in 1910 and 51,500,000 ft^3 of gas was manufactured in 1930 (Geraghty & Miller, 1996a).

The 1958 aerial photograph in the EDR report has limited resolution; however, the former gas holders and/or concrete pads, purifier structure, and possibly the concrete shed are somewhat visible. The wash to the north of the Site is visible and is located approximately 150 feet north of the purifier structure. The large concrete purifier, small concrete shed, concrete foundations for two gas holders, a generator house, and a steel manhole cover bolted to a crude oil sump were present at the Site in 1996 (Geraghty and Miller, 1996b). Two concrete gas holder pads, two concrete small purifier pads, concrete foundations of the meter house, a portion of the generator house foundation, and possibly the small concrete storage shed foundation remained on the Site in 1996 after removal actions were complete (Arcadis/Geraghty & Miller, 1998). There is conflicting information in the Arcadis/Geraghty & Miller report regarding whether the storage shed foundation was removed or not.

The City of Douglas property parcel and surrounding property parcels near the Site contain bulk construction debris piles, including soil, concrete, asphalt, and gravel. A vegetative cover can be seen over the construction debris in a 2017 aerial photograph from the EDR report.

The following list provides a summary of the Site structures shown on Figure 1-2 and operations based on previous investigation reports (Geraghty & Miller, 1996a; Arcadis/Geraghty & Miller, 1998):

- **Generator House**. The generator house was used to manufacture oil gas, with an annual production ranging from approximately 13,700,000 ft^3 in 1910 to approximately 51,500,000 ft^3 in 1930. A portion of the generator house foundation remains on the Site.
- **Oil Sump/Tank**. An oil sump, approximately 2.5 feet in diameter and 3.5 feet tall and associated with a suspected aboveground oil tank of unknown capacity, was located west of the large purifier. The oil sump/tank was removed in August 1996.
- **Gas Holders.**
  - One large gas holder, approximately 102,000 ft^3 in capacity, was located east and southeast of the generator house. The concrete gas holder pad remains on the Site. The approximate location of the large gas holder is shown on Figure 2-2 as Gas Holder 1 for investigation identification purposes.
  - One medium gas holder, approximately 30,000 ft^3 in capacity, was located east of the generator house. The concrete gas holder pad remains on the Site. The approximate location is shown on Figure 2-2 as Gas Holder 2 for investigation identification purposes.
- **Purifiers.**
  - One large purifier structure, approximately 40 feet in diameter and 15 feet high, was located northeast of the generator house. The large concrete purifier pad was removed in August 1996.
  - Two small purifiers of unknown capacity were located east of the generator house. The two small concrete purifier pads remain on the Site. The approximate locations of the small purifiers are shown on Figure 2-2 as Purifier 1 and Purifier 2 for investigation identification purposes.
- **Meter House**. A meter house of unknown size was located southeast of the generator house. The foundation of the meter house remains on the Site.
- **Debris Pile**. One debris pile, 250 feet long (north-south direction) by 130 feet wide, was located west of the generator house. The debris pile was removed in August 1996.
- **Storage Shed**. One small concrete storage shed, 10 feet long by 10 feet wide, was located north of the generator house. The concrete shed was removed in August 1996. The text of the Arcadis/Geraghty & Miller historical report indicates the concrete foundation of the shed remains on the Site; however, the figures in the report indicate the foundation does not exist (Arcadis/Geraghty & Miller, 1998).

2.2.2 Description of MGP Processes

In the United States, the first uses of manufactured gas for lighting were reported in Philadelphia in 1796 and in Richmond, Virginia, in 1803. Manufactured gas was produced by the following three primary processes:

- Coal carbonization (coal gas)
- Carbureted water gas (CWG)
- Oil gas

Based on historical records, only the oil gas process was used at the Site (Geraghty & Miller, 1996a). However, the coal gas and CWG processes are described in this section for comparison to the oil gas process.

2.2.2.1 Coal Carbonization

The earliest MGPs used coal carbonization to produce gas. Coal gas was used exclusively from 1816 to 1875, when the CWG process was developed. Coal was used as a feedstock to produce gas in various types of retorts, with coke generated as a byproduct. Based on historical records, coal gas was not used at the Site.

2.2.2.2 Carbureted Water Gas

CWG involves the enhancement of water gas (blue gas) by spraying oil into a hot vessel that contains the water gas, thereby increasing the calorific value of the water gas. Blue gas was an abundant byproduct of the petroleum industry, which made CWG the most important manufactured gas process in the United States at the time.

The CWG process is intermittent, with alternating "blows" or blast periods and "runs" or gas-making periods. The typical CWG-generating equipment consisted of three brick-lined cylindrical steel vessels: the generator, the carburetor, and the superheater. During a blow, a producer gas that is high in carbon dioxide is formed in the generator by passing air through an incandescent mass of coke or anthracite. This gas is burned by secondary air. The hot products of combustion heat the carburetor checkbrick and then pass from the top of the superheater to the stack. During a run, water gas is made in the generator and then passed into the top of the carburetor, where the oil is sprayed. This mixture is passed down through the carburetor and up through the superheater. As the mixture passes the hot checkbrick, the mixture is thermally cracked and fixed into gases. The CWG, a mixture of blue and oil gas, is passed from the top of the superheater through a water-sealed wash box, where the gas is initially cooled and some of the heavy tars are condensed and removed.

The gas is passed through additional condensers to cool the gas to ambient temperatures. Direct contact with water cools and scrubs the gas. The gas is then sent to a relief holder, which provides constant pressure for gas outflow to the purifying systems during blows and runs. Larger plants featured tar extractors, naphthalene scrubbers, and liquid purification systems to remove the bulk of the hydrogen sulfide prior to passing the gas through the dry purification systems. After hydrogen sulfide removal at these larger plants, the gas was metered and sent to the storage holders pending distribution to the customers.

2.2.2.3 Oil Gas

The oil gas process consists of thermocracking oil in a steam atmosphere. The generating equipment is similar to that used by CWG production. The generator was replaced by a vaporizer similar to the carburetor, filled with checkbrick, and equipped with an oil spray. The carburetor was replaced by a vaporizer followed by a superheater, similar to the CWG process.

The process is cyclical and consists of blows and runs. During a blow, oil is combusted in the vaporizers, and the products of combustion heat the checkbrick of the vaporizers and superheater and pass from the

top of the superheater to the stack. During a run, oil is sprayed into the vaporizer in the absence of air and in the presence of steam. As the mixture passes the hot checkbrick, it is thermally cracked and fixed into gases.

During the run, the stack valve is closed and the oil gas passes to the washbox. The remainder of the process is the same as the CWG process.

2.2.3 Description of MGP Waste

The information in this section was obtained from the historical information regarding MGP processes and previous reports.

Byproducts formed during the manufacture of oil gas were iron oxide purifier waste, light oils, tar, and lampblack. The light oils and tars were generally recovered during condensing or scrubbing operations. Each waste is described as follows:

- Lampblack – The formation of a large amount of lampblack was unique to the oil-gas processes. Lampblack resulted from the high temperature of the gas-making operation, and the amount of lampblack recovered depended on the manufacturing process used. In most plants, lampblack was regarded as a valuable byproduct and was the source of additional revenue or was used as fuel. Depending on the process, approximately 20 pounds of lampblack were formed for every 1,000 ft^3 of gas manufactured, with the majority of the lampblack removed from the gas stream in the wash box. The water from the wash box containing this lampblack in suspension passed through large overflow pipes and was typically stored in settling ponds. Available evidence does not indicate the former presence of a lampblack settling pond. However, because the oil gas process was used at the Site, it is likely lampblack was produced. The chemical constituents of lampblack include carbon, polynuclear aromatic hydrocarbons (PAHs), and heavy metals.
- Tar – Tar was produced by oil-gas processes and consisted of complex hydrocarbons that were removed from the gas stream immediately after generation during cooling, were condensed during gas cooling in the relief holder, or were removed during secondary purification. Areas where tar may have accumulated include the gas holders, areas along underground piping, areas adjacent to gas generators and scrubbers, and in a lampblack settling pond. Chemical constituents of tar include volatile aromatic hydrocarbons and PAHs. The tar was primarily reused as a supplement to boiler fuels, with a small fraction sold.
- Fuel Oil – Fuel oil was used as the primary feedstock material for the oil-gas process. Oil was sprayed into the gas-generating apparatus and cracked into lighter hydrocarbon fractions during gas production. Various grades of fuel oil were likely used throughout the Site's history, with increased use of heavy fuel oil or residual oil during peak production years. Areas where oil may be encountered include fuel oil tanks and oil storage tanks. Oil used at the Douglas property was likely stored in an aboveground steel crude oil tank at the Site (Figure 1-2; Geraghty & Miller, 1996a).
- Iron Oxide Purifier Waste – Wood chips saturated with ferric hydrate were used to remove the hydrogen sulfide from the gas during the final purification process. Some tars or lampblack may also have been removed in the purifiers. Wood chips were replaced as they became depleted or "spent." Areas that may be impacted by iron oxide purifier waste include the former purifier locations and area between the purifiers. Constituents include metals, sulfur, sulfates, cyanide compounds, and PAHs.

2.3 Previous Site Investigations

Since 1995, the following site investigations and remedial activities have been conducted at the Site:

1995 – Site Investigation. Geraghty & Miller conducted a site investigation, with sampling events in October 1995 and December 1995, to evaluate the presence or absence of MGP residuals at the Site. The primary purpose of the investigation was to assess the nature and extent of potential contamination resulting from past MGP activities at the Site and to assess the presence of potential pathways of contaminant migration. The site investigation was limited to surface and shallow subsurface soil sampling

(up to 21 feet bgs). A total of 14 surface soil samples, 23 subsurface soil samples, and 2 duplicate samples were collected.

1996 – Site Investigation. Based on 1995 investigation results, Geraghty & Miller collected five composite surface-soil samples on June 1, 1996, within a 20-foot radius of the areas where MGP impacted soil was previously identified. Each composite sample consisted of six to eight discrete locations within each sampled area. In addition, a composite of the five composite samples was submitted to the laboratory for analysis. Based on visual observation and data from the site investigation, five areas of the Site were identified and recommended for soil removal.

1996 – Interim Remedial Action. Geraghty & Miller conducted material removal and sampling activities in August 1996 to address the five areas recommended for soil removal. Based on the analytical results from the initial removal action, three additional areas were identified for soil removal.

In December 1997, Chapter 7, Article 2 of the Arizona Administrative Code was amended to establish predetermined residential and non-residential SRLs to protect human health and the environment that were consistent with the methodology used by EPA and Region 9 EPA guidance for the calculation of risk-based screening levels. ADEQ revised these SRLs, effective May 5, 2007.

The previous investigations occurred before 1997, when the SRLs were promulgated, or used the 1997 SRLs for comparison during evaluations. To provide consistency, this section compares the results of previous investigations to the 2007 SRLs. Most of the compounds identified in the 2007 SRLs as carcinogens include residential SRL values for both 1×10^{-5} and 1×10^{-6} excess lifetime cancer risks. The 1×10^{-5} risk value may be used during remediation unless a future use of the site will be as a childcare facility or school. Sample results were compared to the 1×10^{-5} risk value for carcinogens because the Site is not currently used for, or anticipated to be used for, a school or daycare facility.

The following sections present an overview of the investigations and interim removal action (IRA), including soil sampling results. Figure 2-1 shows the former soil sampling locations.

2.3.1 Soil Investigations

Soil sampling was conducted during previous investigations by Geraghty & Miller and Arcadis/Geraghty & Miller in 1995 and 1996. Figure 2-1 shows the locations of soil samples collected during the previous 1995 soil investigation, and the areas where composite samples were collected prior to and after soil removal activities in 1996. The previous soil investigations evaluated the presence of MGP-related contaminants in soil, including PAHs, TPHs, metals, and BTEX. Tables 2-1, 2-2, 2-3, and 2-4 present the analytical results from former sampling activities for PAHs, TPHs and fuel hydrocarbons, BTEX, and total metals, respectively. Figures 2-2, 2-3, 2-4 and 2-5 show the locations where PAH, lead, arsenic, and TPH were detected during previous investigations, respectively, and further identifies the locations with concentrations above residential or non-residential SRLs.

2.3.1.1 October 1995 – Soil Investigation

The October 1995 site investigation included surface and subsurface soil sampling. Fourteen surface soil samples, 23 subsurface, and 2 duplicate samples were collected. Four of the surface samples (SS-8, SS 11, SS-12 and SS-13) were collected from offsite locations to evaluate local background concentrations of MGP-related compounds.

2.3.1.1.1 Surface Sampling

Fourteen surface samples were collected between the ground surface and 6 inches bgs. Samples were analyzed for PAHs, total cyanide, and total metals by Analytical Technologies Incorporated laboratory in Phoenix Arizona. Analytical results for PAHs are presented in Table 2-1, and results for metals and cyanide are presented in Table 2-4.

Eight of the surface soil samples exceeded the residential SRLs for select PAHs as follows:

- SS-1 – Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- SS-5 – Benzo(a)pyrene, benzo(b)fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- SS-6 – Benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- SS-7 – Benzo(a)pyrene and indeno(1,2,3-cd)pyrene
- SS-2, SS-10 and SS-14 – Benzo(a)pyrene

Five of the surface soil samples also exceeded the non-residential SRLs for select PAHs as follows:

- SS-1 – Benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene
- SS-5 – Benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- SS-4, SS-6, and SS-7 – Benzo(a)pyrene

The highest concentrations of all PAHs detected were in sample SS-5. Benzo(a)pyrene was detected at a concentration of 230 mg/kg. The non-residential SRL for benzo(a)pyrene is 0.69 mg/kg. SS-5 was located on the north end of the Site and was not adjacent to any known former MGP structures. Figure 2-2 shows the locations where PAHs were detected above SRLs during the October 1995 investigation.

Arsenic was detected above the residential and non-residential SRL of 10 mg/kg in 11 of the surface samples (SS-1 through SS-7, SS-9, SS-10, SS-11, and SS-13). The highest concentration of 83.5 mg/kg was detected in sample SS-6. Lead was detected in samples SS-6 and SS-7 at concentrations of 2,530 mg/kg and 2,290 mg/kg, respectively, which is above the non-residential SRL for lead of 800 mg/kg. SS-6 and SS-7 were located adjacent to the southern former gas holder and the purifier structure, respectively. Figure 3-4 shows the locations where metals were detected above the SRLs during the October 1995 investigation. Maximum and mean lead concentrations in soil of 1,170 and 254 mg/kg respectively, and maximum and mean arsenic concentrations of 35.8 and 15 mg/kg respectively have been reported by the ATSDR (ATSDR, 1995). Section 2.4.3 provides detailed information on background metals concentration at the Site and surrounding environmental issues.

2.3.1.1.2 Soil Boring Sampling

Twenty-three subsurface samples were collected from 10 soil borings at depths ranging from 1.5 feet to 21.5 feet. The borings were located near former MGP structures. An onsite Analytical Technologies Incorporated mobile laboratory analyzed the subsurface samples for BTEX and TPH. Subsurface soil samples that were visibly degraded were also analyzed for total metals, cyanide, and PAHs at the Analytical Technologies Incorporated laboratory in Phoenix, Arizona. Tables 2-1, 2-2, 2-3, and 2-4 present the analytical results for PAHs, TPHs, BTEX, and total metals, respectively. Figures 2-2 through 2-5 show the locations of SRL exceedances for PAHs, lead, arsenic, and TPHs.

Samples from borings SB-1, SB-2, SB-6, and SB-9 had detections of at least one PAH compound at depths ranging from approximately 1 foot to 10 feet. The only concentration exceeding a residential and/or non-residential SRL was observed in boring SB-4 at 1.5 feet bgs, with a benzo(a)pyrene concentration of 4.5 mg/kg, which exceeds the non-residential SRL of 2.1 mg/kg. SB-4 was located north of the small purifiers and west of the central gas holder. The remaining PAH results from all borings were below the residential SRL. Figure 2-2 shows the locations where PAHs were detected above SRLs during the October 1995 investigation.

BTEX compounds were not detected above the laboratory reporting limit of < 0.025 mg/kg in any soil boring samples. TPH was detected in three soil borings (SB-1, SB-4, and SB-8), with a maximum concentration of 4,000 mg/kg in boring SB-4 at a depth of 1.5 feet bgs. The deepest observed TPH concentration was at approximately 10 feet bgs in boring SB-8. Figure 2.5 shows the locations where TPH was detected during the October 1995 investigation.

Arsenic was detected above the residential and non-residential SRL of 10 mg/kg in all samples collected from the 10 soil boring locations, except in one sample from boring SB-8. Arsenic concentrations ranged from 8.7 to 42.1 mg/kg at depths of up to 16.5 feet, with the highest concentration of 42 mg/kg detected in boring SB-2 at approximately 10 feet bgs. The ATSDR has reported maximum and mean arsenic concentrations in the Douglas Site area of 35.8 and 15 mg/kg, respectively (ATSDR, 1995).

Soil boring logs from the previous investigations are included in Appendix C.

2.3.1.1.3 Oil Sump and Purifier Contents Sampling

Waste characterization samples were collected from the sludge in the oil sump and the contents of the large purifier.

The oily sludge sample from the oil sump was analyzed for TPH, RCRA Metals, semivolatile organic compounds (SVOCs), and sulfides, with the following results:

- Total hydrocarbon concentration of 477,000 mg/kg
- Fuel hydrocarbons measured as C6-C10, C10-C22, and C22-C36, with concentrations of 7,300, 270,000, and 200,000 mg/kg, respectively
- No detections of SVOCs (analyzed in accordance with the toxicity characteristic leaching procedure [TCLP] preparation for hazardous waste characterization)
- One volatile organic compound (VOC) was detected (xylene at 180 mg/kg)
- Lead and barium were detected at 1.7 and 0.6 milligram per liter (mg/L) (analyzed for RCRA TCLP metals). Silver, arsenic, cadmium, chromium, mercury, and selenium were not detected.

Samples were collected from the contents of the purifier from the surface to approximately 6 inches bgs on October 25, 1995 (sample SS-3) and March 20, 1996 (sample Purifier). The results from sample SS-3 were as follows:

- Arsenic result at 17.9 mg/kg, above the residential and non-residential SRL
- PAH and metals concentrations below the residential SRLs
- Reactive sulfide concentration of 30.3 mg/kg
- Total sulfur content of approximately 12 percent

The contents of the oil sump and the purifier were not characterized as RCRA hazardous waste.

2.3.1.2 June 1996 – Composite Surface Soil Sampling

Based on the October 1995 investigation results, composite surface soil sampling was conducted in the areas where the soil appeared to have been impacted by former MGP operations. The purpose of the sampling effort was to characterize material that potentially could be disposed of during remedial activities.

Samples were collected within a 20-foot radius of each of the five former surface sampling locations (SS-1, SS-4 through SS-7) that appeared to have been impacted by MGP operations based on analytical results from the previous investigation. Sampling areas are shown on Figure 2-1. Composite samples were also collected near the offsite background surface sample locations SS-11 and SS-12. A composite sample of all the samples collected (Sample COMP) was also analyzed. The composite samples were analyzed for TPH, TCLP metals, SVOCs, and total metals to evaluate whether soil would need to be managed as a RCRA hazardous waste or a petroleum-contaminated soil (PCS) special waste during remedial activities.

TPH was detected in all composite samples at concentrations ranging from 40 to 780 mg/kg (SS-6 Area). TPH was also detected in the offsite composite sample from Area SS-11/SS-12 at a concentration of 110

mg/kg. TPH concentrations are presented in Table 2-2. Concentrations of BTEX compounds were below the laboratory detection limit of 0.025 mg/kg, as presented in Table 2-3. Figure 2-4 shows the composite sampling areas where TPH was detected during the October 1995 investigation.

Arsenic concentrations exceeded the residential and non-residential SRL of 10 mg/kg in samples from Areas SS-4/SS-7 and SS-6. Lead concentrations exceeded the non-residential SRL of 800 mg/kg in the sample from area SS-6 (1,100 mg/kg) and the residential SRL of 400 mg/kg in the sample from area SS-1 (410 mg/kg). Total metals concentrations are presented in Table 2-4. Figure 2-3 shows the composite sampling areas where metals were detected above SRLs during the October 1995 investigation.

TCLP metals and TCLP SVOCs were below the RCRA toxicity characteristic limits.

2.3.2 Remedial Activities – Interim Removal Actions

Based on visual observation and data collected from the soil investigations, the following areas were identified for material removal:

- Oil sump contents
- Purifier structure contents
- Surface soil impacted with metals
- Surface soil impacted with hydrocarbons
- Debris pile impacted with hydrocarbons

Material removal activities were conducted in two phases. Phase I consisted of removing the debris pile, select surface soil, the contents of the purifier and oil sump, the concrete shed in the northwestern portion of the Site, and the purifier. Phase II consisted of removing additional surface soil. The remedial action levels used were the 1996 non-residential health-based guidance levels for PAHs and arsenic cleanup criteria of 15 mg/kg, based on the background arsenic concentration for the City of Douglas area.

Tables 2-1 through 2-4 include the analytical results for soil sampling activities conducted during the soil investigations and removal actions. Figures 2-2, 2-3, 2-4 and 2-5 show the locations where PAHs, lead, arsenic, and TPHs, respectively, were detected during previous investigations, including the IRAs, and further identifies the locations where concentrations exceeded residential or non-residential SRLs. TPH does not have an associated 2007 residential or non-residential SRL. Details of the Phase I and Phase II IRAs are provided in this section.

2.3.2.1 August 1996 – Interim Removal Action

The Phase I IRA was performed in August 1996 and consisted of removing the debris pile, oil sump, concrete shed, purifier, and surface soil previously identified as being impacted with metals and/or PAHs and performing confirmation sampling to evaluate whether additional soil removal was required. Environmental Response, Inc. (ERI) was the IRA contractor, performing demolition and removal activities; Geraghty and Miller prepared the work plan; and Arcadis/Geraghty Miller provided oversight of ERI and collected soil confirmation samples.

2.3.2.1.1 Debris Pile Removal and Sampling

The debris pile was removed in August 1996. An area measuring 130 feet in an east-west direction by 250 feet in a north-south direction was excavated until visibly clean soil was observed. Available information did not indicate the depth of excavation and referred to the samples as “surface samples.” The excavated area is shown on Figure 2-2 (Geraghty and Miller, 1996b).

The material from the debris pile was placed on a shaker apparatus to separate bricks, vegetation, and other miscellaneous debris from the lampblack material. The lampblack was transported to Waste

Management's Butterfield Station Regional Landfill as a special waste soil and the remaining debris was characterized as PCS solid waste.

Following removal of the debris pile, an area measuring 100 feet east-west by 125 feet north-south was divided into twenty 25-foot square sections, as shown on Figure 2-5. A composite sample was collected from each section and analyzed for TPH. If TPH concentrations exceeded 30 mg/kg in a grid section sample, an additional foot of soil was excavated and a second composite sample was collected. Samples were labeled based on the section from which they were collected (i.e., Debris No.) with a "B" added if the area was further excavated and sampled again.

Additionally, five additional composite samples (Debris A, B, C, D, and E) were collected by compositing the samples from four grid sections. The samples were submitted to the laboratory for the analysis of lead, arsenic, and PAHs. Figure 2-5 shows the composite sampling areas.

Laboratory TPH results of the section samples indicated the initial samples from Sections 3, 4, 9, and 19 exceeded 30 mg/kg, with a maximum concentration of 590 mg/kg in sample Debris 4. An additional 1 foot of soil was excavated in these areas and a composite sample of the remaining samples was collected. All results from the second sampling effort were below the laboratory detection limit of 20 mg/kg.

One PAH (benzo(a)pyrene) result of 0.7 mg/kg at area Debris A exceeded the residential SRL of 0.69 mg/kg. Arsenic results from area samples ranged from 14 to 19 mg/kg, exceeding the residential SRL for arsenic, with the results consistent with historical ATSDR Douglas area mean and maximum background values of 15 and 35.8 mg/kg, respectively (ATSDR, 1995). Lead results ranged from 12 to 100 mg/kg and were below the residential SRL of 400 mg/kg in all samples and below the non-residential SRL. It should be noted current background lead and arsenic levels are planned to be evaluated as part of this Site Investigation Work Plan. Historical background metals are further discussed in Section 2.4.3 and the planned background metals evaluation is described in Section 3.3.

2.3.2.1.2 Oil Sump Removal

The contents of the oil sump were removed on August 13, 1996. Approximately 30 gallons of fluid (oily sludge) were removed. The oil sump was removed on August 16, 1996. When removed, the sump was approximately 2.5 feet in diameter and 3.5 feet long, with no perforations. No visible staining of the surrounding soil was observed during sump removal. The oil sump and contents were recycled at the proper facility. Soil sampling was not performed at the oil sump location.

2.3.2.1.3 Shed and Purifier Removal and Sampling

The concrete shed and purifier were removed in August 1996 and included the following activities:

- On August 5, 1996, Spray Systems Environmental performed an asbestos inspection prior to removal of the concrete shed and purifier and submitted a National Emission Standards for Hazardous Air Pollutants notification for demolition of the structures.
- On August 19, 1996, approximately 261 tons of material were removed from the purifier structure and transported to Waste Management's Butterfield Station Regional Landfill as solid waste. The shed and purifier structure were demolished (the concrete pad remained), and approximately 230 tons of concrete from the shed and purifier structure demolition were transported to Speedway Landfill for management as a solid waste.
- On August 20, 1996 composite samples were collected from the following locations (shown on Figure 2-5) and submitted to the laboratory for TPH analysis:
  - Area adjacent to the north of the purifier (PUR-N)
  - Area adjacent to the south of the purifier (PUR-S)
  - Area adjacent to the east of the purifier (PUR-E)
  - Area adjacent to the west of the purifier (PUR-W)

TPH concentrations in the composite samples ranged from 71 mg/kg at PUR-N to 520 mg/kg at PUR-E.

- On August 21, 1996, the concrete purifier pad was removed and approximately 78 tons of concrete were transported to Waste Management's Butterfield Station Regional Landfill as solid waste.

Soil to the north and west of the concrete pad was excavated. Depth of excavation was not provided in the report but is estimated to be approximately 1 foot bgs based on other activities at the site. Soil to the south and east of the pad was not excavated because of the presence of the El Paso natural gas line.

Composite samples were collected from the following locations (shown on Figure 2-1) and analyzed for arsenic, lead, and TPH:

- Area adjacent to the north side of the purifier (PUR-N with August 21, 1996 date)
- Below the former purifier pad (Subpurifier)

TPH concentrations were 140 and 57 mg/kg from PUR-N and Subpurifier samples, respectively. Arsenic concentrations were 11 and 15 mg/kg from PUR-N and Subpurifier samples, respectively, which are above the residential and non-residential SRLs of 10 mg/kg and below and equal to the ATSDR background concentration of 15 mg/kg.

On August 22, 1996, the area north of the purifier pad and the area below the purifier pad were regraded and composite samples were collected (PUR-N-B and SUBPUR-B) and submitted for PAH analysis. Depth of excavation was not provided in the report but is estimated to be approximately 1 foot bgs. PAHs were detected below residential SRLs in PUR-N-B. Figure 2-2 shows the composite sampling locations and PAH results.

2.3.2.1.4 Surface Soil Impacted with Metals and PAHs Removal and Sampling

Surface soil sampling results from four locations (SS-4 through SS-7) sampled in October 1995 and June 1996 had detections of arsenic, lead, and PAHs. Because of the proximity of SS-4 and SS-7, these two areas were combined and are referenced as SS4/SS-7, resulting in three material removal areas (SS4-7, SS5, and SS6).

On August 19, 1996, approximately 1 foot of soil was removed from each area, resulting in a total of 894 tons of soil and other materials transported offsite to Waste Management's Butterfield Station Regional Landfill as solid waste PCS.

Samples were collected and analyzed for TPH, arsenic, lead and PAHs, as follows:

- One composite sample (SS4-7) from combined area SS4/SS7
- One composite sample (SS5 Comp) from excavated area SS-5
- Three composite samples (SS6W, SS6CENT, and SS6E) from the western, central, and eastern portions of area SS-6

TPH was not detected above the laboratory reporting limit of 20 mg/kg in SS-5 or SS-4-7 samples. Lead concentrations were below residential SRLs. Arsenic concentrations of 11 and 15 mg/kg for SS-5 and SS-4/SS-7, respectively, were above the residential and non-residential SRLs of 10 mg/kg and below and equal to the mean ATSDR background concentration of 15 mg/kg.

TPH concentrations in SS6W, SS6CENT, and SS6E ranged from 39 to 53 mg/kg; lead ranged from 11 to 217 mg/kg (below the residential lead SRL); and arsenic concentrations ranged from 18 to 24 mg/kg (above the SRL of 10 mg/kg and between the mean and maximum ATSDR background concentration of 15 and 35.8 mg/kg).

A composite sample (SS6 PAH Comp) of SS6W, SS6CENT, and SS6E was also submitted for PAH analysis. The benzo(a)pyrene result of the composite sample was 2.9 mg/kg, which is above the residential SRL.

2.3.2.2 November 1996 – Interim Remedial Action

The Phase II IRA was performed in November 1996 for removal of additional soil in the SS-6 area, the area south and east of the purifier, and along the western fence of the Site. Excavated areas were identified based on Phase I IRA results and visibly impacted soil. An Orange Coast Analytical Laboratory onsite mobile laboratory analyzed samples onsite for PAHs to determine the extent of the excavation. Samples were not collected from under the generator house or gas holder foundations. An El Paso Natural Gas representative was onsite to assist representatives of Arcadis/Geraghty Miller in locating the El Paso gas line.

2.3.2.2.1 Removal Activities

Additional removal activities were conducted on November 4 and 5, 1996, as follows:

- On November 4, 1996, approximately 1 foot of soil was removed from the SS-6 area and composite samples (SS6WC, SS6CC, and SS6EC) were collected from the western, center, and eastern areas of the excavation and analyzed for PAHs. All sample results were below the laboratory reporting limit.
- On November 5, 1996, visibly impacted material was removed from the west fence line and a composite sample (WESTFENCE) was collected for PAH analysis. All sample results were below the laboratory reporting limit.
- On November 5, 1996, 1 foot of soil was removed from the south and east of the former purifier and three composite samples were collected (PURS31, PURS32, and PURE31) and analyzed for PAHs, with the following results:
  - PURS31 results for benzo(a)pyrene (6.6 mg/kg) and benzo(a)anthracene (6.9 mg/kg) exceeded the non-residential and residential SRLs, respectively.
  - PURS32 result for benzo(a)pyrene (1.8 mg/kg) exceeded the residential SRL.

Because of the presence of MGP-impacted soil, an additional 1.5 feet of soil were excavated at these locations and two additional composite samples (PURS41 and PURS42) were collected. The benzo(a)pyrene result of 1.5 mg/kg from PURS42 exceeded the residential SRL. The remaining PAH results were less than the residential SRL.

Approximately 380 tons of material were removed during Phase II activities and transported to Waste Management's Butterfield Station Regional Landfill as solid waste PCS. Upon completion of Phase II activities, approximately 400 tons of clean fill material were used to regrade the Site.

2.3.2.2.2 Investigation-derived Waste

ERI transported the material removed from the site. All petroleum-contaminated material removed during 1996 was transported to Waste Management's Butterfield Station Regional Landfill for management as PCS. All petroleum-contaminated material removed during 1997 was transported to Waste Management's Butterfield Station Regional Landfill for management as special waste. The uncontaminated solid waste was transported to Speedway Landfill in Tucson, Arizona. The oil sump contents were transported to Allen Moore Diversified Services Incorporated in Chandler, Arizona, to be recycled. The oil sump itself was transported to EMCO Recycling in Phoenix, Arizona, to be recycled (Arcadis/Geraghty & Miller, 1998).

2.4 Preliminary Estimate of Impacts and Data Gaps

Data gaps from the previous site investigations and the 1996 IRA include soil remaining at the Site known to be impacted, uncharacterized soil, and potential impacts to deep soil and groundwater that were not characterized during the previous site investigations and remediation.

2.4.1 Impacted Soil

Based on historical data, the following five areas at the Site remain above the current benzo(a)pyrene residential SRL:

- The previous removal action reported Area-A sample concentrations of 0.7 mg/kg within the debris pile removal area after the previous remediation efforts, which is above the current benzo(a)pyrene SRL of 0.69 mg/kg.

- The results for the PUR-S 32/42 area south of the former large purifier (which was removed) and northwest of the small northwest purifier pad were 1.8 (PURS32) and 1.5 mg/kg (PURS42) at 1 foot and 2.5 feet bgs, respectively, after the previous remediation efforts.

- The result for the SS-10 surface sample collected west of Gas Holder 1 and south of the former debris pile was 1.3 mg/kg.

- The result for the SS-14 surface sample collected north of Gas Holder 2 was 0.76 mg/kg.

- The result for the SS-5 surface sample collected north of former MGP operations was 230 mg/kg, in addition to benzo(b)fluoranthene, benzo(a)anthracene, indeno(1,2,3-cd)pyrene, benzo(k)fluoranthene, and dibenzo(a,h)anthracene results of 170, 160, 160, 93, and 8.6 mg/kg, respectively. Remediation appears to have been conducted adjacent to, and south of, this location.

Based on historical data, arsenic remains above the residential and non-residential SRL of 10 mg/kg in most of the historical samples collected. The SS-1 Area sample also had a lead result of 410 mg/kg, which was above the residential SRL of 400 mg/kg and below the non-residential SRL of 800 mg/kg.

2.4.2 Uncharacterized Soil

The lateral and vertical extents of potentially impacted soil have not been fully delineated at the Site. The sample collection depths and associated analytical results from previous investigations and removal actions, along with the locations and types of former MGP structures, were evaluated to obtain a preliminary estimate of the impacts to soil. Available information indicates that impacts to soil from former MGP operations are likely limited to the upper 3 feet of soil outside the foundational structures remaining on the Site. However, the previous site investigations provided limited data on vertical impacts to soil, and contaminant concentrations in known areas at the Site (described in Section 2.4.1) remain above SRLs after the 1996 remediation efforts.

Previous remedial efforts included composite sampling and excavation at known areas of contamination, largely based on surface sample concentrations. Additionally, data from historical subsurface borings were intermittent, leaving parts of the Site uncharacterized. For example, the SB-4 soil boring was sampled at 5 and 10 feet bgs and a majority of the borings were sampled at 10 feet bgs, which neglected the shallow subsurface at 5 feet bgs; SB-9 was sampled at 10 and 15 feet bgs; and SB-8 was sampled at 10 and 20 feet bgs. The extent of potential impacts from MGP-related activities is incomplete due to these vertical data gaps.

The previous sampling strategy primarily used composite sampling of excavated areas and biased sample depths in borings without delineating the extent of soil impacts. While this strategy can be an efficient method to remove areas of known MGP-related impacts to soil, the strategy leaves data gaps in site characterization. Additional sampling is required at the Site to adequately characterize the extent of

MGP-related contamination prior to RAP development and remediation activities to remove the remaining MGP-related impacted soil.

2.4.2.1 Uncharacterized Soil Beneath Foundations

The material removal activities in 1996 did not include removal of all the subsurface foundations. The remaining foundations include the following:

- Generator house foundation
- Two concrete gas holder pads
- Concrete meter house foundation
- Two small concrete purifier pads.

Consequently, soil remains uncharacterized below the remaining foundational structures. The structures themselves also require characterization for disposal purposes. Additionally, the concrete shed foundation north of the generator house may also be present.

2.4.3 Uncharacterized Potential Impact to Groundwater

Potential impact to groundwater from MGP-related activities has not been determined based on historical data. Available historical data indicate MGP-related impacts may be limited to the upper 3 feet of soil. However, soil at the Site has not been characterized and potential impacts to groundwater have not been evaluated.

2.5 Background Metals and Surrounding Environmental Issues

The ATSDR reported background lead concentrations in the Douglas area above SRLs, with lead results from surface sampling of a widespread area in Douglas ranging from 50 to 1,170 mg/kg from samples collected from less than 3 inches bgs. Deeper lead results from two samples collected between 3 inches and 1 foot bgs were reported with lead concentrations less than 250 mg/kg (ATSDR, 1995), indicating background lead soil concentrations generally decrease with depth. Lead results from offsite residential soil are provided in Table 2-5.

The ATSDR has reported arsenic concentrations near the Site. Surface soil samples collected between 1 and 6 miles from the smelter had maximum and mean arsenic concentrations of 35.8 and 15 mg/kg, respectively, reported by the EPA and representative of background arsenic concentrations in the Douglas area (ATSDR, 1995). Additionally, samples collected from the Phelps Dodge smelter property and analyzed for arsenic had a maximum concentration of 1,840 mg/kg and a mean concentration of 422 mg/kg prior to smelter soil removal and 118 mg/kg maximum concentration after smelter soil removal. Arsenic concentrations in soil at the MGP Site after the Site Phase II IRA (Arcadis/Geraghty & Miller, 1998) ranged from 8.7 to 42.1 mg/kg, with a mean concentration of 17.1 mg/kg, which are similar concentrations to the background arsenic concentrations in the Douglas area that were reported by the ATSDR (ATSDR, 1995).

The ATSDR also reported on background groundwater concentrations (ATSDR, 1995) in the Douglas area. Groundwater samples were collected and tested by ADEQ in 1984 from Douglas municipal city well No. 6 (referenced as offsite in Table 2-6) and from a Phelps Dodge well (referenced as onsite in Table 2-6).

3. Proposed Investigation Activities

The following section describes the investigation activities proposed for the Site to provide additional information on the vertical and lateral extents of contamination from MGP-related activities and to collect information to develop a RAP. Site investigation activities will include evaluating the vertical and lateral extents of potential impacts under the remaining foundational structures, evaluating the vertical and lateral extents of impacts remaining at locations with contamination above the SRLs, and evaluating potential deeper soil impacts up to 70 feet bgs. Additionally, groundwater will be evaluated in the deeper soil borings if encountered.

The types of sampling that will be performed, proposed sampling locations, and proposed analyses are presented in this section.

3.1 Sampling

Based on available historical information, five areas have contamination levels that remain above the Arizona SRLs for PAHs in soil (the proposed soil boring identifiers are in parentheses):

- Debris A-2 area (D-SB18, D-SB19, D-SB20, and D-SB25)
- SS-10 location (D-SB22)
- SS-5 location (D-SB21)
- SS-14 location (D-SB23)
- PURS32/42 area (D-SB17)

Soil under the former MGP foundational structures and concrete pads has not been characterized. Therefore, borings are proposed to be advanced at the remaining subsurface structures and locations where historical data indicate concentrations above Arizona SRLs to evaluate MGP-related compounds of TPH, PAH, and metals. An attempt will be made to locate the former shed foundation, which may or may not remain on the Site. Borings are also proposed at and near the following foundational structures and pads:

- Gas holder pads 1 and 2 (D-SB11 and D-SB12)
- Purifier pads 1 and 2 (D-SB24)
- Meter house (D-SB13)
- Generator house (D-SB14 and D-SB15)
- Oil Sump (D-SB16)

A detailed description of the proposed soil borings is presented in Section 3.1.1.

Therefore, to evaluate data gaps, background metals, and potential groundwater impacts, 25 soil borings are proposed to be advanced at the Site, including 3 deep borings to evaluate potential deep impacts to soil and groundwater, if encountered. Samples from all borings will be analyzed for metals and PAHs. Figure 3-1 shows the proposed boring locations and concentrations where PAH compounds have been previously detected above SRLs based on historical reporting. Table 3-1 lists the sample collection depth and analyses for each boring.

As discussed in Section 2.5, the ATSDR conducted a background lead and arsenic analysis in 1995 for the Douglas area, which included the former MGP site parcels (ATSDR, 1995). However, samples will be collected to determine the current background lead and arsenic concentrations (described in Section 3.3). Twelve offsite sample locations are planned to be used in the statistical analysis (D-SB22 and D-SB25 through D-SB35). Anticipated boring locations are shown on Figure 3-1.

Geotechnical parameters will also be collected at borings D-SB11 through D-SB15, D-SB19, D-SB21, D-SB22, and D-SB24 through D-SB35 to classify soil and develop engineering parameters in areas of potential excavation.

3.1.1 Soil Borings

Where applicable, prior to advancing soil borings, surface samples will be collected at 0.5 foot bgs. Surface soil samples will be collected at boring locations not located at a foundation or pad location.

Twenty-two shallow borings and three deep borings will be advanced at the Site. The shallow soil boring depths will range from 10 to 20 feet bgs in total depth to assess the lateral and vertical extents of impact. Three deep borings will be advanced up to 70 feet bgs to assess potential deep soil impacts and the presence of perched groundwater. If groundwater is encountered in a deep boring, a groundwater monitoring well will be installed and developed, and groundwater samples will be collected to assess potential impacts to groundwater from MGP-related activities.

Based on historical boring log information, the hand-auger drilling method will be attempted to advance shallow soil borings up to 10 feet bgs, and the auger drilling method is proposed for the shallow borings greater than 10 feet bgs. If the hand-auger method encounters refusal at a shallow boring, the auger drilling method may be used to complete the soil boring or a new location will be proposed depending on laboratory results prior to refusal. The sonic drilling method is proposed for borings D-SB25, D-SB26, and D-SB26, which may encounter groundwater. Borings that exhibit MGP-related impacts based on field visual observation and screening results will be advanced farther.

Because “SB-10” was the last location identification (ID) from the historical Site investigation, the first boring location ID will start with “SB11” with a prefix of “D-” for APS Site Douglas. Proposed boring locations are shown on Figure 3-1. The following list identifies the proposed soil borings and the purpose of each boring:

- **D-SB11** – Boring D-SB11 is located at the central portion of the Gas Holder 1 pad and is proposed to be advanced through the concrete to a depth of up to 20 feet bgs. The purpose of this boring is to evaluate the vertical extent of potential MGP-related contamination under the Gas Holder #1 pad.
- **D-SB12** – Boring D-SB12 is located at the central portion of the Gas Holder 2 pad and is proposed to be advanced through the concrete to a depth of up to 20 feet bgs. The purpose of this boring is to evaluate the vertical extent of potential MGP-related contamination under the Gas Holder 2 pad.
- **D-SB13** – Boring D-SB13 is located at the central portion of the Meter House pad and is proposed to be advanced through the concrete to a depth of up to 20 feet bgs. The purpose of this boring is to evaluate the vertical extent of potential MGP-related contamination under the Meter House pad.
- **D-SB14** – Boring D-SB14 is located at the southeast portion of the Generator House foundation and is proposed to be advanced through the foundation to a depth of up to 20 feet bgs. The purpose of this boring is to evaluate the vertical extent of potential MGP-related contamination under the east side of the Generator House foundation.
- **D-SB15** – Boring D-SB15 is located at the north portion of the Generator House foundation and is proposed to be advanced through the foundation to a depth of up to 10 feet bgs. The purpose of this boring is to evaluate the vertical extent of potential MGP-related contamination under the north side of the Generator House foundation.
- **D-SB16** – Boring D-SB16 is located at the former oil tank and sump location and is proposed to be advanced to a depth of up to 20 feet bgs. The purpose of this boring is to evaluate the vertical extent of potential MGP-related contamination at the former oil tank and sump location.
- **D-SB17** – Boring D-SB17 is located to the south of the PURS32/PURS42 excavation and to the east of Purifier Pad #2 location and is proposed to be advanced to a depth of 20 feet bgs. The purpose of

this boring is to evaluate the vertical and lateral extents of remaining MGP-related contamination at the PURS32/PURS42 location.

- **D-SB18** – Boring D-SB18 is located near the southwest corner of the former Debris Pile Area A location (sample ID Debris A-2) and is proposed to be advanced to a depth of 10 feet bgs. The purpose of this boring is to evaluate the vertical extent of potential MGP-related contamination at the Debris Pile Area A location.
- **D-SB19** – Boring D-SB-19 is near the southeast corner of the Debris Pile Area A location and is proposed to be advanced to 20 feet bgs. The purpose of this boring is to evaluate the vertical extent of remaining MGP-related contamination at the Debris Pile Area A and Area B locations.
- **D-SB20** – Boring D-SB20 is located near the northeast corner of the Debris Pile Area A location and is proposed to be advanced to a depth of 10 feet bgs. The purpose of this boring is to evaluate the vertical and lateral extents of potential MGP-related contamination near the Debris Pile Area A location.
- **D-SB21** – Boring D-SB21 is located near surface sample SS-5 and is proposed to be drilled to a depth of 20 feet bgs. The purpose of this boring is to evaluate the vertical and lateral extents of remaining MGP-related contamination near the SS-5 sample location.
- **D-SB22** – Boring D-SB22 is located near surface sample SS-10 and is proposed to be drilled to a depth of 20 feet bgs. The purpose of this boring is to evaluate the vertical and lateral extents of remaining MGP-related contamination near the SS-10 sample location, as well as offsite background lead and arsenic concentrations.
- **D-SB23** – Boring D-SB23 is located near surface sample SS-14 and is proposed to be drilled to a depth of 10 feet bgs. The purpose of this boring is to evaluate the vertical and lateral extents of remaining MGP-related contamination near the SS-14 sample location and Gas Holder 2.
- **D-SB24** - Boring D-SB24 is located to the southeast of Purifier #1 pad and is proposed to be drilled to a depth of 20 feet bgs. The purpose of this boring is to evaluate the vertical and lateral extents of potential MGP-related contamination near the purifier pads.
- **D-SB25** – Boring D-SB25 is located at the northwest corner of the Debris Pile Area A location and is proposed to be advanced to a depth of 70 feet bgs. The purpose of this boring is to evaluate the vertical and lateral extents of remaining MGP-related contamination near the Debris Pile Area A location, evaluate potential impacts to groundwater at the northwest corner of the Site, and provide metals data for calculating the background metals concentration.
- **D-SB26** – Boring D-SB26 is located at the southeast corner of gas holder pad 1 and is proposed to be advanced to 70 feet bgs. The purpose of this boring is to evaluate the vertical and lateral extents of potential MGP-related contamination near gas holder 1, evaluate potential impacts to groundwater at the southeast corner of the Site, and provide metals data for calculating the background metals concentration.
- **D-SB27** – Boring D-SB27 is located southwest of the Site and is proposed to be advanced to 70 feet bgs. The purpose of this boring is to evaluate the vertical and lateral extents of potential MGP-related contamination southwest of the Site, evaluate potential impacts to groundwater southwest of the Site, and provide metals data for calculating the background metals concentration. This boring will also be used to assess horizontal and vertical PAHs if PAHs above SRLs are detected at boring D-SB22.
- **D-SB28 and D-SB29** – Borings D-SB28 and D-SB29 are located south and west of the Site and are proposed to be advanced to 20 feet bgs to provide metals data for calculating background metals concentration. These borings will also be used to assess horizontal and vertical PAHs if PAHs above SRLs are detected at boring D-SB22.
- **D-SB30** – Boring D-SB30 is located northeast of the Site and is proposed to be advanced to 20 feet bgs to provide metals data for calculating background metals concentration. This boring will also be used to assess horizontal and vertical PAHs if PAHs are detected above SRLs at borings D-SB23 or D-SB21.

- **D-SB31 through D-SB34** – Borings D-SB31 through D-SB34 are located north of the Site and are proposed to be advanced to 20 feet bgs to provide metals data for calculating background metals concentration.
- **D-SB35** – Boring D-SB35 is located northwest of the Site and is proposed to be advanced to 20 feet bgs. The purpose of this boring is to provide metals data for calculating background metals concentration. This boring will also be used to assess horizontal and vertical PAHs if PAHs are detected above SRLs at boring D-SB25.

At locations where a subsurface foundation or pad exists, the first soil sample will be collected immediately under the structure at approximately 1 foot bgs. Samples are planned to be collected in 2.5-foot intervals up to 10 feet bgs, 5-foot intervals from 10 to 30 feet bgs, and 10-foot intervals from 30 to 70 feet bgs. If the shed foundation exists, a boring will advanced (ID D-SB36) up to 20 feet bgs and located based on visual observation of stained soil if it exists. A boring will be advanced deeper than the proposed total depth if visual and screening observations of the soil, described in Section 4.1.1, indicate MGP impacts may exist. Borings will be advanced and soil samples collected until the absence of potential MGP impacts based on visual and screening observations of the soil. A boring location may be modified based on obstructions encountered, utility locations, or observation of MGP-impacted soil during field activities. Additional borings may be drilled and sampled based on visual observations and/or analytical results to provide additional data for remediation. Table 3-1 provides a description of each sample location and lists the geotechnical and analytical testing for each sampled depth.

Generally, samples collected at the deepest depth at each boring will be held by the laboratory pending analysis based on the previous sample result. If the results of the previous sample are less than the laboratory reporting limit, the sample will not be analyzed. If refusal is encountered at a boring location, the boring location may be moved and a second attempt made within 5 feet of the originally planned location. Samples used for background metals analysis will not be collected within the Site extent shown on Figure 1-2.

Borings D-SB13, D-SB17 and D-SB23 are located near the existing El Paso Natural Gas Company gas line. Final locations for these borings will be identified during field activities to avoid potential impacts to the gas line. The borings will be located a minimum of 10 feet from the gas line location. A non-destructive method, such as air lancing or hand auger, will be used for at least the upper 10 feet at these boring locations to reduce potential impacts to the gas line. Because of safety concerns, the El Paso gas line will not be exposed during any investigation or remediation activities.

3.1.2 Chemical Analysis

The proposed analyses for each sample collected from the soil borings are listed in Table 3-1 and have been selected based on former operational activities at the Site and the results of the previous investigations. The analyses have been selected to characterize the waste streams that will be generated during the site investigations and ongoing remedial activities.

The objective of chemical analysis is as follows:

- Evaluate the presence of remaining MGP-related contamination which have not previously been characterized below PAH SRLs.
- Evaluate the vertical and lateral extent of potential MGP-related contamination in soil near the remaining subsurface foundations and concrete pads to provide data for remedial actions at the Site.
- Assist with waste characterization from remedial activities.

3.1.2.1 Extent Determination

The analyses selected to evaluate the extent of contamination were based on the results from previous investigations and historical activities at the Site. The anticipated analyses for evaluating the extent of contamination and identifying the remedial actions and the rationale for the distribution of selected analyses include:

- PAHs (EPA Method 8310 or 8270 SIM) – PAHs were identified during previous investigations at the former Debris Pile Area A, northwest of the small purifier pads at PURS42, and in surface samples SS-5, SS-10 and SS-14, with detections of benzo(a)pyrene SRL exceedances. PAH concentrations have not been assessed under the remaining foundations and pads planned for removal and are unknown. All samples are proposed to be analyzed for PAHs every 2.5 feet as described previously.
- Metals (EPA Method 6010B/7471A) – Lead was identified above the residential SRL in the SS-1 composite sample, above the non-residential SRL in the SS-6 surface discrete and composite samples, and the SS-7 surface discrete sample during previous investigations. Lead was less than the residential SRL, as described in Section 2.3.2.1.4, after IRA soil removal at the SS-6 and SS-7 (SS4-7 composite sample) locations. The SS-1 surface composite sample result was 410 mg/kg, above the residential SRL of 400 mg/kg and below the non-residential SRL of 800 mg/kg. Arsenic was identified across the Site above the residential and non-residential SRLs of 10 mg/kg and estimated to be within background concentrations based on the 1995 ATSDR study of the Douglas area. However, due to the uncertainty of background concentrations near the Site, offsite samples will be collected and analyzed to calculate the background concentration (described in Section 3.3). Metals concentrations have not been characterized under the remaining foundations and pads. Metals are proposed to be analyzed at all boring locations.
- VOCs (EPA 8260B) – BTEX was not detected above the laboratory reporting limits based on historical soil boring results. The oil sump waste characterization results indicated the waste fluid in the oil sump had elevated TPH and xylene concentrations. The historical investigation (Geraghty and Miller, 1996) reported no evidence of leaking; however, the soil at the oil sump location was not characterized. VOCs will be analyzed from the planned D-SB16 sample location at the former oil sump to determine if there are potential vertical VOC impacts from the former oil sump. VOCs have not been detected in historical soil sampling.
- Waste Characterization – Waste characterization samples will be collected during the site investigation. Samples will be analyzed at locations where the highest concentrations are expected, generally at and under the remaining subsurface structures and at areas where data gaps exist. Collecting waste characterization samples provides several advantages, including pre-profiling soil to allow direct haul-off during remedial activities. This saves cost by reducing double-handling, eliminating the need to construct temporary stockpiles, and reducing the chance of runoff or odor issues. Composite waste samples will be collected from the concrete pads and the generator house foundation material. The following waste characterization analyses are proposed:
  - PAHs (EPA Method 8310 or 8270 SIM)
  - Total RCRA 8 metals (EPA Method 6010B/7471A)
  - Total VOCs (EPA Method 8260B)
  - PCBs (EPA Method 8082)
  - Paint filter (EPA Method 9095 [for liquid/saturated samples])
  - Ignitability
  - pH (EPA Method 9045B [for liquid samples])
  - Total cyanide (EPA Method 9014)

3.1.3 Geotechnical Analysis

Geotechnical data are needed for the site-specific GPL model and to evaluate excavation sloping and support and excavations near Site structures. The GPL model is used to determine site-specific GPLs and offsite remediation goals. The following geotechnical data are required to support the remediation design and the GPL modeling:

- Moisture content
- Sieve analysis with percent passing the No. 200
- Atterberg limit

- Porosity
- Fractional organic carbon
- In situ density
- Consolidated, undrained shear strength with pore pressure

Samples for geotechnical analysis will be collected at locations throughout the Site and at multiple depths to obtain a thorough understanding of subsurface conditions. Sample collection is concentrated in areas expected to receive additional remedial activities based on historical activities.

3.2 Groundwater Evaluation

The three deep soil borings D-SB25 through D-SB27 may encounter perched groundwater. If encountered, a notice of intent will be submitted to the Arizona Department of Water Resources using form 55-43B, a groundwater monitoring well will be installed, developed, and groundwater samples will be collected. Groundwater samples will be analyzed for the following constituents:

- PAHs (EPA Method 8310)
- BTEX (EPA Method 8021B)
- Metals (EPA Method 200.7)
- Total VOCs (EPA Method 8260B)

3.3 Background Metals Evaluation

Offsite samples will be collected for lead and arsenic analysis to evaluate background lead and arsenic concentrations near the Site. The calculated background concentrations will be used for development of a RAP. Nine offsite soil borings will be used to collect samples at 5-foot intervals to a total depth of 20 feet bgs. Sample locations were selected outside the Site extent and in undisturbed areas where feasible. Undisturbed areas were selected to avoid anthropogenic bias in the sample results. For example, samples will not be collected adjacent to Pan American Avenue because of the potential for elevated lead levels resulting from the high traffic volume of vehicles and varying fuel sources at the border. Available sample locations are also limited to property access and will primarily be collected from City of Douglas parcels. Sample intervals were determined based on previous arsenic results, available lithological data, and blow counts from historical borings.

- The highest arsenic and lead results were from surface samples: the surface horizon.
- Soils are classified as coarse grained up to 5 feet bgs: the 5-foot bgs horizon.
- Arsenic tends to increase near 10 feet bgs and a mix of clayey silt, silt, sand, and clay from 7.5 to 15 feet bgs is present: the 10-foot bgs horizon.
- Blow counts generally increase near 15 to 16.5 feet bgs, indicating a potential lithologic horizon: the 15-foot bgs horizon.
- Arsenic decreased in the boring that was advanced to approximately 20 feet bgs (SB-8): the 20-foot bgs horizon.

Three offsite borings will be advanced to 70 feet bgs off the southeast, southwest, and northwest corners of the Site extent to evaluate deeper offsite arsenic and lead concentrations and potential groundwater impacts. If groundwater is encountered, water samples will be collected to evaluate lead and arsenic in groundwater.

3.3.1 Statistical Analysis of Offsite Samples

Background threshold values will be developed with a 95/95 upper tolerance limit (UTL95-95) being the target statistic. The UTL95-95 is a 95 percent upper confidence limit on the 95th percentile of the

assumed background parent population. Upper tolerance limits will be calculated using either a distributional assumption (when deemed appropriate for the background constituent data) or using a nonparametric approach (no distributional assumption) when evidence for a distribution is not available.

Goodness-of-fit tests will be performed to determine the probability that a particular background data set could have come from the tested distribution. Because a data set can pass a goodness-of-fit test for more than one distribution, the following hierarchy will be used to choose a parametric distribution with which to calculate the background statistics:

- Normal distribution assumed – the data pass the test for normality.
- Gamma distribution assumed – the data fail the test for normality but pass the test for the gamma distribution.
- Lognormal distribution assumed – the data are not normal or gamma but pass the test for lognormality.
- Nonparametric methods used – the data fail the test for all three distributions.

The EPA (EPA, 2015) warns that use of a parametric lognormal distribution on a lognormally distributed data set may yield impractically large background values, especially when the standard deviation of the log-transformed data becomes greater than 1.0 for small data sets (less than 30 to 50 measurements). Because environmental data sets typically can be modeled by a gamma distribution, gamma distribution limits will be given preference over lognormal distribution limits, where appropriate.

3.4 Utility and Subsurface Structure Evaluation

The objective of the utility evaluation is to identify underground utilities and remnants of former MGP-related subsurface structures onsite. Prior to the start of the intrusive investigation, known subsurface utilities will be identified by Arizona 811 (formerly Arizona Blue Stake). A third-party utility locating firm will further designate the utility locations using signal line generators and ferrous magnetic locator methods. This firm will also attempt to locate abandoned utilities and subsurface structures. Additionally, El Paso Natural Gas will be contacted to ensure the El Paso pipeline has been marked properly. The areas for the soil borings will be cleared by using nondestructive air lance methods before drilling to verify no utilities are present at the boring location. The utility locations will be surveyed and added to the Site plans.

The current project schedule for the field investigation is presented on Figure 3-2.

4. Sampling and Analysis Plan

This section describes the soil sampling procedures. Also included are procedures for equipment decontamination and investigation-derived-waste disposal.

4.1 Field Sampling Procedures

4.1.1 Soil Boring Drilling

Soil borings are proposed to be advanced using hollow-stem auger, air rotary, or sonic drilling methods. A hand auger with air lancing, if needed, may be used to advance borings D-SB13, D-SB17 and D-SB23 based on field observations and if impacts to the El Paso natural gas line are anticipated. The concrete pad at soil boring D-SB13 will be cored prior to using an auger, if required. Samples will be collected at approximately 2.5-foot intervals by driving standard penetration test split-spoon samplers or ring samplers (auger or sonic drilling method) or hand driving a sampling shoe with a sleeve liner (hand auger method). If geotechnical samples cannot be manually collected, samples will be collected using the auger drill rig. The samplers will be driven in general accordance with American Society for Testing and Materials (ASTM) Method D1586.

The depth to groundwater is unknown. If any of the boreholes encounter groundwater, a notice of intent to drill a monitoring well will be filed with the Arizona Department of Water Resources (ADWR).

Lithologic observations will be recorded on a Jacobs standard boring log form or using P-log software on hand-held data acquisition devices. The field engineer/scientist will note soil attributes such as color, particle size, consistency, moisture content, structure, plasticity, odor (if obvious) and organic content. Soil cuttings will be described using the Uniform Soil Classification System and ASTM Standard Procedure D2488. Based on visual observations in the field, headspace evaluations using a photoionization detector (PID) may be conducted to identify additional sample locations.

At the completion of the borehole advancement and sample collection, the borehole will be abandoned in accordance with the ADWR Well Abandonment Handbook (ADWR, 2008). All boreholes will be filled with cement-bentonite grout using a tremie to place the grout from the bottom of the borehole.

4.1.1.1 Soil Boring Sample Collection

The standard penetration test split-spoon or ring samplers will be used to collect soil samples at depths of 2.5 feet and greater. Samples may also be collected using a hand auger and a manually driven ring sampler will be used as described in Section 4.1.1. The following procedure will be used when soil samples are collected from borings during drilling activities:

1. At some locations, geotechnical samples will be collected to assist with remedial design. When geotechnical and environmental soil samples are collected from borings at the same depth, they will be collected simultaneously while using the auger drilling method. The geotechnical samples will be collected in rings or brass sleeves that will be placed in the bottom of the sampler. Environmental samples will be collected in containers noted in Table 4-1 and will be taken from the top of the sampler.
2. A decontaminated sampler will be opened, and decontaminated sample collection sleeves or rings will be inserted.
3. The sampler will be closed.
4. The sample will be collected from the soil boring in general accordance with ASTM Method D1586.
5. The sample collection will be verified by looking into the sampler drive shoe. If no sample is retrieved, a second attempt will be made to retrieve the sample. If a second sample cannot be obtained, the boring will be advanced to the next sampling depth and sampling retried.

6. If a sample is collected, the drive shoe will be removed, and the sample collection sleeves or rings will be removed.
7. If required, methanol extractions will be performed. The fixed-base laboratory will supply 40-milliliter vials that contain a measured volume of methanol and a pre-calibrated syringe for sample collection. At the designated sample location, an intermediate sample container (a 2 to 4-ounce soil jar) will be used to place the soil sample material, followed immediately (within 30 minutes) by the transfer of approximately 5 grams of the sampled material using the pre-calibrated syringe to the 40- milliliter vial (the final sample container) and sealed using the provided vial lid.
8. For other analyses, disposable scoops will be used to transfer soil from the sleeves to glass jars.
9. Each sample will be labeled, logged into a chain-of-custody form, and placed in a sample box or cooler maintained at 4 degrees Celsius (°C) to be submitted to a laboratory for analysis.

As a result of the short hold time of EnCore™ samplers, methanol extraction is the preferred method for collecting and preserving samples for VOC analysis.

Samples will be shipped from the Clarkendale International FedEx ship center located at 1433 N G Ave, Douglas, Arizona 85607, prior to 2:45 pm.

4.1.2 Groundwater Sample Collection

The three deep soil borings will be advanced to 70 feet bgs. If groundwater is encountered, a groundwater monitoring well will be installed and developed prior to the collection of groundwater samples. Three purge volumes will be removed from the well and containerized prior to sample collection. Groundwater samples will be analyzed for the following constituents:

- PAHs (EPA Method 8310)
- BTEX (EPA Method 8221B)
- Metals (EPA Method 200.7)
- Total VOCs (EPA Method 8260B)

4.1.3 Decontamination Procedures

Equipment decontamination procedures will be used as part of the site investigation activities. Non-dedicated or non-disposable field equipment used during sampling will be decontaminated prior to, and again after, the sampling event has been completed to prevent cross-contamination between sampling locations. Decontamination procedures for field personnel are described in this subsection and in the site Health and Safety Plan (CH2M HILL, 2018).

Contamination at the Site is principally associated with PAHs and lead; therefore, pressurized hot water cleaning to remove soil and contaminants will be the primary feature of the non-disposable equipment decontamination process. Two levels of non-disposable equipment decontamination will be implemented. The first level (Level 1) will be a general decontamination process that applies to onsite non-disposable equipment used during soil drilling and excavation. The second level (Level 2) of equipment decontamination will be a specific decontamination process applied to non-disposable sampling equipment, tools, utensils, and other equipment that might contact soil samples. This decontamination protocol is based on information presented by EPA in *Protocol for Groundwater Evaluation*, OSWER DIR 9080.0-1.

4.1.3.1 Level 1 – General Equipment Decontamination

Non-dedicated or non-disposable equipment, including support and ancillary equipment, vehicles, and tools, will go through the following general decontamination process before site entry:

- Removal of all loose dirt.

- Thorough cleaning with high pressure hot water and Alconox or equivalent laboratory-grade detergent and, if necessary, scrub until all visible dirt, grime, grease, oil, loose paint, and rust flakes have been removed.
- Rinse with potable water.

Non-disposable sampling equipment will be put in a plastic-lined “dirty equipment” area for decontamination after each sampling event.

Use of disposable sampling equipment such as Teflon® tubing and plastic scoops is preferred where appropriate. Disposable sampling equipment will be disposed of properly after the equipment has been used to collect a sample or has contacted the soil.

4.1.3.2 Level 2 – Sampling Equipment Decontamination

Non-disposable sampling equipment, such as split spoons and other items that may contact the soil samples, will go through the following decontamination procedure:

- Removal of all loose dirt.
- Scrub with Alconox or equivalent laboratory-grade detergent and water.
- Rinse with potable water.
- Rinse with distilled deionized water.
- Air dry on a clean surface or rack, such as Teflon®, stainless steel, or oil-free aluminum, elevated at least 2 feet above ground.

4.1.4 Investigation-derived Waste

The following five waste streams are anticipated:

- Excavated and/or drilled soil that does not show impacts by visual or PID screening.
- Concrete from coring the gas holders and meter house pad.
- Debris from coring the generator house foundation.
- Soil that shows impact from visual or PID screening.
- Decontamination wash water.

Waste soil from soil borings will be placed in lined roll-off bins equipped with locking lids and will remain onsite pending analytical results of a waste characterization soil sample from the roll-off bin. A single composite sample will be collected from each roll-off bin. Based on the analytical results from previous sampling events, the roll-off bins will have “Special Waste” labels that identify the contents and date of generation. After results are received, the waste materials will be appropriately disposed of at a licensed facility that is approved for disposal by APS. The soil and concrete waste streams will be segregated for disposal purposes.

If laboratory results for soil and groundwater samples indicate concentrations below the SRLs of the analyzed compounds, the investigation-derived waste (IDW) water will be added to the soil prior to characterization. If laboratory results for IDW decontamination water indicate concentrations above the SRLs, the water will be allowed to evaporate onsite in a plastic lined area with a berm. If laboratory results for IDW groundwater indicate concentrations above the SRLs, the water will be disposed of properly offsite.

Used and disposable personal protective equipment and used disposable equipment will be double-bagged and placed in a municipal refuse dumpster. These wastes are not considered hazardous and can be sent to a municipal landfill.

4.2 Laboratory Analysis

The Quality Assurance Project Plan (QAPP; Jacobs, 2019b) for APS's MGP sites was revised in January 2019. The document was reviewed and approved by ADEQ in a letter dated March 2019. The QAPP was developed as specified in *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations* (EPA, 2001). The QAPP provides a description of the analytical methods to be used, the applicable laboratory Practical Quantitation Limits for each analytical method, and sample handling and storing procedures. Analytical data collected during the investigation will be maintained by the project chemist in an Access-based database.

4.2.1 Field Samples

Soil samples and waste characterization samples will be analyzed for chemical constituents depending on the sample purpose and matrix. Table 4-1 provides details for method, container type, preservatives, and holding times for each analysis.

4.2.2 Field Quality Control Samples

The purpose of the field quality assurance/quality control (QA/QC) program is to provide a measure of data quality. Field duplicates indicate the precision of the overall sampling and analysis event. Equipment and field blanks monitor contaminants that might be introduced by the sampling equipment.

The following QA samples will be collected as part of the soil sampling effort:

- **Field Duplicates.** Field duplicates will be collected at a frequency of 1 per 10 confirmation soil samples designated for offsite analysis**.** Field duplicates will be identified in the field and blind-coded on the sample chain-of-custody**.** The duplicate will be analyzed for the same parameters as the original sample.
- **Equipment Blanks.** If non-dedicated sampling equipment (e.g., hand towel, portable pump) is used, equipment blanks will be collected at a frequency of at least one per sampling event. After decontamination procedures have been performed on the sampling equipment, deionized water will be poured over the sampling equipment, collected in the proper sampling bottles, and submitted for analysis. The equipment blank will be analyzed for the same chemical parameters as the samples being collected (PAHs, metals, etc.).
- **Trip Blanks.** Trip blanks provided by the laboratory will accompany each shipment of soil samples collected for VOCs. Trip blanks will be prepared in the laboratory using deionized water and shipped to the site in sealed sample containers. They will remain capped in the field prior to shipment and will be submitted for analysis with the regular soil samples. One trip blank will be included with each shipment of VOC samples to the offsite laboratory.
- **Matrix Spike/Matrix Spike Duplicates (MS/MSD).** MS/MSD samples will be collected at a frequency of 1 per 20 for soil samples that will be submitted to the laboratory for analysis. MS/MSD samples will be identified in the field and identified on the sample chain-of-custody. The MS/MSD sample will be analyzed for the same parameters as the original sample. For soil, the MS/MSD can be collected from the brass sleeve or jar at the laboratory. Additional soil volume is not required.

4.2.3 Quality Control Data Packages

A Level 2 QC laboratory data package will be required for all laboratory analysis. A Level 2 package includes documentation discussed in the QAPP. The Level 2 QA/QC packages will be evaluated as outlined in the project QAPP (Jacobs, 2019b).

4.3 Sample Packaging and Shipment

Most samples will be shipped for delivery to the laboratory.

All soil sample containers will be placed in a sturdy shipping container (a steel-belted or hard-plastic cooler). The following packaging procedure will be used when samples are shipped to a laboratory:

1. When ice is used, secure the drain plug of the cooler with tape to prevent melting ice from leaking out of the cooler. Double bag all ice.
2. Line the bottom of the cooler with bubble wrap to prevent breakage during shipment.
3. Secure bottle/container tops with custody seals.
4. Wrap all glass sample containers in bubble wrap to prevent breakage.
5. Seal all sample containers in plastic zip-lock bags.

All samples will be placed in coolers with the appropriate chain-of-custody forms. All forms will be enclosed in a large plastic bag and affixed to the underside of the cooler lid. Empty space in the cooler will be filled with bubble wrap or Styrofoam peanuts to prevent movement and breakage during shipment. Vermiculite may also be placed in the cooler to absorb any spills. Ice used to cool samples will be double sealed in two zip-closure plastic bags and placed on top and around the samples to chill them to the correct temperature. Each ice chest will be securely taped shut with nylon strapping tape, and custody seals will be affixed to the front, right, and back of each cooler. Analytical data will be managed as described in the APS QAPP (Jacobs, 2019b).

4.4 Sample Documentation

A systematic field sample ID nomenclature has been developed for APS samples collected at APS sites. Consistent nomenclature has been designed to facilitate entry, management, and reporting of field and analytical data for APS.

The field sample ID nomenclature will vary depending on the sampling purpose. Each field sample ID generated must be unique for each environmental sample collected. The field sample ID is limited to 25 characters. This section describes IDs for field samples and QC samples.

4.4.1 Regular Field Sample ID

The following nomenclature is used for regular field samples:

[Site Code]-[Location ID]-[Sample Date]-[Letter Code (optional)]

Where:

Site Code = Single-digit site code given to each site managed by APS. The site code for Douglas is “D.”

Location ID = Location that is being sampled, which is determined before sampling in the field, and depth of sample (i.e., B21). If additional borings are drilled, the location will be a sequentially selected number.

Sample Date = Sample collection date in format of “MMDDYY.”

Letter Code = This is optional and only to be used if multiple regular samples are collected from the same location; for example, when collecting samples from multiple depths at the same location, use alphabetical letter starting with A to make each sample collected unique.

Example 1: D-B21-2.5-030119 = Arizona Public Service – Douglas, field investigation sample collected from Borehole B-21 at a depth of 2.5 feet bgs on March 1, 2019.

Samples selected for an MS/MSD will be identified on the chain-of-custody form. The sample will be identified using the station code and depth or date as identified previously. In addition to the sample ID,

the acronym “MS/MSD” will be written in the comments field of the chain-of-custody form to identify that the sample has been selected as an MS/MSD.

4.4.2 Quality Assurance/Quality Control Samples

Field QC samples can include field duplicates, equipment blanks, field blanks, ambient blanks, trip blanks and any other type of field QC samples that may be required for sampling. The field sample ID nomenclature to use would be as follows:

[Site Code]-[QC Type Code]##-[Sample Date]

Where:

Site Code = Single-digit site code given to each site managed by APS. The site code for Douglas is “D”.

Field QC Type = Two-digit code for each type of field QC sample that could be collected. Valid values are provided in Table 4-2. This code is followed by a two-digit sequential number starting with 01 to accommodate multiple samples collected on the same day of the same field QC type.

Sample Date = Sample collection date in format of “MMDDYY.”

Example 1: D-SS01-030119 = Arizona Public Service – Douglas, split sample 1 collected on March 1, 2019

Example 2: D-EB02-030119 = Arizona Public Service, Douglas, equipment blank 2 collected on March 1, 2019

4.5 Field Documentation

4.5.1 Field Log Books

Field log books will be used to document where, when, how, and from whom any vital project information was obtained. Log book entries will be complete and accurate enough to permit reconstruction of field activities. Log books are to be bound with consecutively numbered pages. Each page will be dated and the time of entry noted in military time. All entries will be legible, written in black or blue ink, and signed by the individual making the entries. Language will be factual, objective, and free of personal opinions or other terminology that might prove inappropriate.

At a minimum, the following information will be recorded during the collection of each sample:

- Sample location and description
- Depth of sample for borings and trenches
- Location of trench and boring (measurement from a permanent fixed point and GPS locations)
- Notation if photograph(s) are taken and photograph number
- Site sketch showing sample location and measured distances, if not otherwise clear
- Sampler’s name(s)
- Date and time of sample collection
- Designation of sample as composite or grab
- Type of sample (i.e., matrix)
- Type of sampling equipment used

- Onsite measurement data (e.g., temperature, pH, conductivity) (may be collected in a separate field sampling diary)
- Field observations and details important to analysis or integrity of samples (e.g., heavy rains, odors, colors)
- Preliminary sample descriptions (e.g., for soils: clay loam, very wet; for groundwater: clear water with no petroleum-like odor)
- Type(s) of preservation used or present in sample container
- Instrument reading and units of measurement (e.g., pH units, µS/cm, nephelometric turbidity unit)
- Lot numbers of the sample containers, sample tag numbers, chain-of-custody form numbers, and chain-of-custody seal numbers
- Shipping arrangements (overnight air bill number)
- Recipient laboratory

In addition, the following information will be recorded in the field log book for each day of sampling:

- Team members and their responsibilities
- Time of site arrival/entry onsite and time of site departure
- Other personnel onsite
- A summary of any meetings or discussions with APS employees
- A summary of any meetings or discussions with the public, a city employee, or others
- Deviations from sampling plan, site safety plan, or QAPP procedures
- Changes in personnel or responsibilities, as well as the reason for the change
- Levels of safety protection
- Calibration readings for any equipment used and equipment model and serial number

4.5.2 Chain-of-Custody Records

A chain-of-custody record will be used to document sample collection and shipment to a laboratory for sample analysis. A chain-of-custody form will be completed for each cooler of samples shipped to a laboratory. The chain-of-custody record will identify the contents of the shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. The site leader or designee will sign the chain-of-custody record. The site leader or designee will sign the "relinquished by" box and note the date, time, and air bill number (if samples are shipped).

4.5.3 Photographs

Photographs will be taken at various sample locations and at other areas of interest onsite. They will serve to verify the information entered in the field log book. When a photograph is taken, the following information will be written in the log book or recorded in a separate photograph field log:

- Photograph number
- Time, date, location, and, if appropriate, weather conditions
- Description of the subject of the photograph
- Name of person taking the photograph

5. Public Notice and Public Participation

APS has a community relations and ongoing public involvement program planned for the Site. During implementation of this work plan, APS will prepare Site-specific newsletters in both English and Spanish. The newsletters will be distributed to the neighboring residents, businesses, community leaders, and border patrol agents and it will be posted at the pedestrian walkway to the east of the Site. APS will brief its employees, community leaders, and city staff.

During the remedial planning phase of the project, APS will complete the ADEQ-required public notice, as specified in Arizona Revised Statute (A.R.S.) §49-176, and other proactive public participation activities, which will be included in the RAP submitted to ADEQ.

6. References

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Tables

Table 1-1. Summary of Operational History

APS Douglas Former MGP Site, Douglas, Arizona

Year	Site Structure	Site Activities
1905-1908	No information available.	Manufactured gas operations began between 1905 and 1908 and continued until the 1930s[1].
1929	Generator house, one large purifier, two small purifiers, a meter house, a steel crude oil tank, two gas holders, and a concrete shed[2].	Manufactured gas operations continued at the Site.[1,2]
1930		Arizona Edison Company controlled by Peoples Light and Power Corporation. Annual Production 51.5377 million cubic feet and annual sales 43.9241 million cubic feet.[3]
1938		Arizona Edison Company (natural) Natural gas purchased from El Paso Natural Gas Company for resale. Annual sales 115.9389 million cubic feet.[3] Supplies Douglas.
1940		Arizona Edison Company Inc. natural gas purchased from El Paso Natural Gas Company for resale. Annual sales 135.4454 million cubic feet.[3] Supplies Douglas.
1944-1947	Concrete shed, large purifier, and possibly the meter house.[1,2] Remaining site structures are not indicated on the 1947 Sanborn map.	Manufactured gas operations were discontinued prior to 1947. Annual gas production ranged from 13.7 million cubic feet in 1910 to 51.5 million cubic feet in 1930.[1,3]
1945		Arizona Edison Company Inc. natural gas purchased from El Paso Natural Gas Company for resale. Annual sales 215.9795 million cubic feet.[3] Supplies Douglas.
1950		Arizona Edison Company Inc. natural gas purchased from El Paso Natural Gas Company for resale. Annual sales 584.7239 million cubic feet.[3] Supplies Douglas.
1995	Concrete shed, large purifier, concrete foundations from the two gas holders and generator house, and a 2-foot-deep sump associated with the steel crude oil tank.	Site investigation performed from October 1995 to June 1996. The contents of the oil sump and debris from the purifier were characterized in addition to surface and subsurface soil samples.[1]
1996	Oil sump contents and sump; purifier contents and purifier; debris pile; concrete shed; and surface soil.	Materials removed from Site based on Arcadis/Geraghty & Miller, *Material Removal Activities Former Manufactured Gas Plant, Douglas, Arizona* (June 5, 1998).[4]

Notes:

[1] Based on available site investigation report (Geraghty & Miller, *Site Investigation Former Manufactured Gas Plant, Douglas, Arizona*, July 14, 1996).

[2] Based on available Sanborn maps.

[3] Review of *Manufactured Gas Plant Sites in Arizona*, Draft Report for Discussion Purposes Only. Atlantic Environmental Services Inc. May 1992.

[4] Based on available material removal activities (Arcadis/Geraghty & Miller, *Material Removal Activities Former Manufactured Gas Plant, Douglas, Arizona*, June 5, 1998).

Table 2-1. Summary of Historical Analytical Data for Soil – Polynuclear Aromatic Hydrocarbons (PAHs)

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(e)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
Residential SRL[3,4]						**NE[6]**	**NE**	**NE**	**3,700**	**22,000**	**6.9**	**0.69**	**6.9**	**NE**	**69**	**680**	**0.69**	**2,300**	**2,700**	**6.9**	**56**	**NE**	**2,300**
Non-Residential SRL[5]						**NE**	**NE**	**NE**	**29,000**	**240,000**	**21**	**2.1**	**21**	**NE**	**210**	**2,000**	**2.1**	**22,000**	**26,000**	**21**	**190**	**NE**	**29,000**
SS-1	SS-1	Discrete	10/26/95	Surface	mg/kg	--	--	1.5	1.7U	1.6	17D	33D	21D	40D	11D	20D	0.75	69D	0.63	25D	1.7	28D	78D
SS-2	SS-2	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.1U7	0.084	1.0D	1.8D	1.5D	2.3D	0.64D	1.1D	0.13	3.9D	0.08	2.1D	0.15	2.4D	4.6D
SS-3	SS-3	Discrete	10/25/95	Surface	mg/kg	--	--	0.17U	0.1U7	0.0083U	0.038	0.071	0.052	0.094	0.044	0.017U	0.034U	0.16	0.017U	0.04	0.083U	0.085	0.15
SS-4	SS-4	Discrete	10/26/95	Surface	mg/kg	--	--	0.42	0.1U7	0.32	2.9D	4.7D	4.6D	9.8D	1.8D	3.4D	0.46	12D	0.41	8.2D	1.1	7.7D	13D
SS-5	SS-5	Discrete	10/26/95	Surface	mg/kg	--	--	32	1.3	17D	160D	230D	170D	99D	93D	150D	8.6D	630D	15D	160D	13	280D	740D
SS-6	SS-6	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.048	3.6D	3.4D	8.8D	8.8D	4.5D	11D	1.0D	27D	0.033	13D	0.095	18D	18D
SS-7	SS-7	Discrete	10/25/95	Surface	mg/kg	--	--	0.19	0.17U	0.36	4.2D	5.6D	5.2D	9.8D	2.3D	5.6D	0.65D	15D	0.18	8.6D	1	9.3D	16D
SS-8	SS-8	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.047	0.14	0.37	0.26	0.46	0.17	0.19	0.034	0.7	0.017U	0.2	0.083U	0.43	0.91D
SS-9	SS-9	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.27	0.62D	0.41	0.94D	0.3	0.37	0.063	1.1D	0.038	0.37	0.11	0.83D	1.3D
SS-10	SS-10	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.70D	1.3D	1.0D	2.0D	0.44D	0.90D	0.16	2.5D	0.034	1.8D	0.32	1.5D	2.8D
SS-11	SS-11	Discrete	10/25/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.049	0.11	0.074	0.12	0.063	0.064	0.034U	0.19	0.017U	0.048	0.083U	0.096	0.2
SS-12	SS-12	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.075	0.045	0.14	0.1	0.025	0.13	0.039	0.1	0.017U	0.026	0.083U	0.038	0.052
SS-13	SS-13	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.0083U	0.087	0.14	0.14	0.17	0.078	0.12	0.034U	0.19	0.017U	0.17	0.083U	0.076	0.065
SS-14	SS-14	Discrete	10/26/95	Surface	mg/kg	--	--	0.17U	0.17U	0.046	0.38	0.76D	0.61	1.1D	0.28	0.49D	0.083	1.8D	0.024	0.92D	0.086	0.83D	2.0D
SB-1	SB-1 4.5-6	Discrete	10/25/95	4.5-6.0	mg/kg	--	--	0.17U	0.17U	0.0083U	0.072	0.17	0.096	0.21	0.056	0.086	0.034U	0.25	0.017U	0.1	0.083U	0.11	0.31
SB-1	SB-1 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-2	SB-2 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-3	SB-3 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-4	SB-4 0-1.5	Discrete	10/25/95	0-1.5	mg/kg	--	--	0.59	0.17U	0.66	2.1D	4.5D	3.2D	5.4D	1.1D	2.4D	0.24D	13D	0.017U	4.5D	1.1	9.4D	14D
SB-4	SB-4 3-4.5	Discrete	10/25/95	3.0-4.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-4	SB-4 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-5	SB-5 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-6	SB-6 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.047	0.017U	0.017U	0.083U	0.0083U	0.03
SB-6	SB-6 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-7	SB-7 10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-7	SB-7-Dup-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-8	SB-8 9-10	Discrete	10/25/95	9-10.0	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-8	SB-8 20-21.5	Discrete	10/25/95	20.0-21.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-9	SB-9 3-4	Discrete	10/26/95	3.0-4.5	mg/kg	--	--	0.17U	0.17U	0.0093	0.05	0.12	0.079	0.16	0.052	0.066	0.034U	0.17	0.017U	0.093	0.083U	0.058	0.2
SB-9	SB-9 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-9	SB-9 15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-9	SB-9 Dup-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
SB-10	SB-10 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	--	--	0.17U	0.17U	0.0083U	0.017U	0.017U	0.017U	0.017U	0.017U	0.017U	0.034U	0.017U	0.017U	0.017U	0.083U	0.0083U	0.017U
Debris Pile	Debris A-2	Composite	08/19/96	Surface	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.3	0.7	0.3	0.6	0.2	0.2	0.25U	0.7	0.25U	0.4	1.0U	0.3	0.9
Debris Pile	Debris B-2	Composite	08/19/96	Surface	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.3	0.6	0.3	0.5	0.1	0.2	0.25U	0.7	0.25U	0.4	1.0U	0.2	0.8
Debris Pile	Debris C-2	Composite	08/19/96	Surface	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.3	0.6	0.3	0.7	0.2	0.2	0.25U	0.7	0.25U	0.4	1.0U	0.3	0.7
Debris Pile	Debris D-2	Composite	08/19/96	Surface	mg/kg	0.2U	0.2U	0.5U	0.2U	0.02U	0.03	0.07	0.03	0.08	0.02	0.03	0.05U	0.08	0.05U	0.05	0.2U	0.03	0.09
Debris Pile	Debris E-2	Composite	08/19/96	Surface	mg/kg	0.2U	0.2U	0.5U	0.2U	0.02U	0.05	0.14	0.07	0.21	0.03	0.04	0.05U	0.17	0.05U	0.11	0.2U	0.09	0.19
SS-4/SS-7	SS4-7	Composite	08/21/96	1	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.2	0.4	0.2	0.5	0.1	0.2	0.25U	0.7	0.25U	0.3	1.0U	0.5	0.8
SS-5	SS5 Comp	Composite	08/19/96	1	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.2	0.5	0.2	0.6	0.1	0.2	0.25U	0.7	0.25U	0.3	1.0U	0.3	0.7
SS-6	SS6 PAH Comp	Composite	08/19/96	1	mg/kg	2.0U	2.0U	5.0U	2.0U	0.2	1.3	2.9	1.3	2.6	0.8	1.2	0.5U	4.7	0.5U	1.8	2.0U	2.1	3.8
PUR N	PUR N-B	Composite	08/22/96	1	mg/kg	1.0U	1.0U	2.5U	1.0U	0.1U	0.2	0.4	0.2	0.5	0.1	0.2	0.25U	0.7	0.25U	0.2	1.0U	0.2	0.8

Table 2-1. Summary of Historical Analytical Data for Soil – Polynuclear Aromatic Hydrocarbons (PAHs)

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Anthracene	Benzo(e)anthracene	Benzo(e)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
Residential SRL[3,4]						**NE[6]**	**NE**	**NE**	**3,700**	**22,000**	**6.9**	**0.69**	**6.9**	**NE**	**69**	**680**	**0.69**	**2,300**	**2,700**	**6.9**	**56**	**NE**	**2,300**
Non-Residential SRL[5]						**NE**	**NE**	**NE**	**29,000**	**240,000**	**21**	**2.1**	**21**	**NE**	**210**	**2,000**	**2.1**	**22,000**	**26,000**	**21**	**190**	**NE**	**29,000**
Purifier	SUBPUR B	Composite	08/22/96	1	mg/kg	0.2U	0.2U	0.5U	0.2U	0.02U	0.02U	0.02U	0.05U	0.05U	0.02U	0.02U	0.05U	0.05U	0.05U	0.02U	0.2U	0.02U	0.02U
SS-6 Area - E	SS6WC	Composite	11/4/96	2	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U
SS-6 Area -C	SS6CC	Composite	11/4/96	2	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U
SS-6 Area - E	SS6EC	Composite	11/4/96	2	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U
PUR E	PURE31	Composite	11/5/96	1	mg/kg	--	--	0.1U	0.1U	0.22	0.56	0.64	0.33	1.1	0.48	0.34	0.1U	0.8	0.1U	0.64	0.1U	0.1U	1.1
PUR S	PURS31	Composite	11/5/96	1	mg/kg	--	--	1.2	0.26	9.7	6.9	6.6	4.5	5.9	3.7	3.6	0.48	12	0.93	5.4	0.33	2.08	0.1U
PUR S	PURS32	Composite	11/5/96	1	mg/kg	--	--	0.27	0.1U	0.77	1.1	1.8	0.76	1.8	0.8	0.57	0.17	1.7	0.1U	1.4	0.1U	0.12	2.1
PUR S	PURS41	Composite	11/5/96	2.5	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U
PUR S	PURS42	Composite	11/5/96	2.5	mg/kg	--	--	0.45	0.1U	2.1	1.3	1.5	0.79	1.6	0.91	0.79	0.1U	2.8	0.13	1.0	0.88	0.20	3.4
West Fence	WESTFENCE	Composite	11/5/96	Surface	mg/kg	--	--	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U	0.1U

Notes:

[1] ft bgs = feet below ground surface

[2] mg/kg = milligram(s) per kilogram

[3] Residential SRLs represent the value for 10^{-6} carcinogenic risk for compounds identified as carcinogens in Appendix A of Title 18, Chapter 7.

[4] Cells highlighted in yellow indicate that the compound exceeded the 2007 residential soil remediation level (SRL).

[5] Cells highlighted in **red** indicate the compound exceeded the 2007 non-residential SRL.

[6] NE = Standard not established

[7] -- = Sample not analyzed for this compound

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

D = Sample was diluted for analysis

Table 2-2. Summary of Historical Analytical Data for Soil – TPHs and Fuel Hydrocarbons

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Sample Depth (ft bgs)[1]	Units[2]	TRPH (EPA Method 418.1)[5]	Fuel Hydrocarbons C6-C10	Fuel Hydrocarbons C10-C22	Fuel Hydrocarbons C22-C36
SB-1	SB-1 1.5-3	Discrete	10/25/95	1.5-3.0	mg/kg	780	--	--	--
SB-1	SB-1 4.5-6	Discrete	10/25/95	4.5-6.0	mg/kg	20U	--	--	--
SB-1	SB-1 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20U	--	--	--
SB-1	SB-1 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-2	SB-2 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	20U	--	--	--
SB-3	SB-3 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	20U	--	--	--
SB-4	SB-4 0-1.5	Discrete	10/25/95	0-1.5	mg/kg	4000	--	--	--
SB-4	SB-4 3-4.5	Discrete	10/25/95	3.0-4.5	mg/kg	24	--	--	--
SB-4	SB-4 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20U	--	--	--
SB-4	SB-4 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-5	SB-5 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20U	--	--	--
SB-6	SB-6 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20U	--	--	--
SB-6	SB-6 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-7	SB-7 10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	20U	--	--	--
SB-7Dup	SB-7-Dup-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	20U	--	--	--
SB-7	SB-7 15.0-16	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-8	SB-8 9-10	Discrete	10/25/95	9.0-10.0	mg/kg	26	--	--	--
SB-8	SB-8 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	20U	--	--	--
SB-8	SB-8 20-21.5	Discrete	10/25/95	20.0-21.5	mg/kg	20U	--	--	--
SB-9	SB-9 0-1.5	Discrete	10/25/95	0-1.5	mg/kg	400U	--	--	--
SB-9	SB-9 3-4	Discrete	10/26/95	3.0-4.5	mg/kg	20U	--	--	--
SB-9	SB-9 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	20U	--	--	--
SB-9	SB-9 15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	20U	--	--	--
SB-9Dup	SB-9-Dup-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	20U	--	--	--
SB-10	SB-10 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	20U	--	--	--
Oil Sump[4]	Sludge	Discrete	12/27/95	--	mg/kg	477,000	7300	270000	200000
SS-1 Area[5]	SS-1	Composite	6/1/1996	Surface	mg/kg	40	--	--	--
SS-4/SS-7 Area[5,6]	SS4-7	Composite	6/1/1996	Surface	mg/kg	270	--	--	--
SS-5 Area[5]	SS5	Composite	6/1/1996	Surface	mg/kg	480	--	--	--
SS-6 Area[5]	SS6	Composite	6/1/1996	Surface	mg/kg	780	--	--	--
SS-11/SS-12 Area[5,7]	BACK SS11-12	Composite	6/1/1996	Surface	mg/kg	110	--	--	--
Multiple[5,8]	COMP	Composite	6/1/1996	Surface	mg/kg	260	--	--	--
Debris 1	Debris 1	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 2	Debris 2	Composite	08/19/96	Surface	mg/kg	23	--	--	--
Debris 3	Debris 3	Composite	08/19/96	Surface	mg/kg	50	--	--	--
Debris 3	Debris 3B	Composite	08/20/96		mg/kg	20U	--	--	--
Debris 4	Debris 4	Composite	08/19/96	Surface	mg/kg	590	--	--	--
Debris 4	Debris 4B	Composite	08/20/96	>1	mg/kg	20U	--	--	--
Debris 5	Debris 5	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 6	Debris 6	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 7	Debris 7	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 8	Debris 8	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 9	Debris 9	Composite	08/19/96	Surface	mg/kg	73	--	--	--

Table 2-2. Summary of Historical Analytical Data for Soil – TPHs and Fuel Hydrocarbons

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Sample Depth (ft bgs)[1]	Units[2]	TRPH (EPA Method 418.1)[5]	Fuel Hydrocarbons C6-C10	Fuel Hydrocarbons C10-C22	Fuel Hydrocarbons C22-C36
Debris 9	Debris 9B	Composite	08/20/96	>1	mg/kg	20U	--	--	--
Debris 10	Debris 10	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 11	Debris 11	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 12	Debris 12	Composite	08/19/96	Surface	mg/kg	24	--	--	--
Debris 13	Debris 13	Composite	08/19/96	Surface	mg/kg	27	--	--	--
Debris 14	Debris 14	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 15	Debris 15	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 16	Debris 16	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 17	Debris 17	Composite	08/19/96	Surface	mg/kg	20U	--	--	--
Debris 18	Debris 18	Composite	08/19/96	Surface	mg/kg	28	--	--	--
Debris 19	Debris 19	Composite	08/20/96	Surface	mg/kg	60	--	--	--
Debris 19	Debris 19B	Composite	08/20/96	>1	mg/kg	20U	--	--	--
Debris 20	Debris 20	Composite	08/20/96	Surface	mg/kg	20U	--	--	--
SS4-7	SS4-7		08/21/96	1	mg/kg	20U	--	--	--
SS5	SS5 Comp	Composite	08/19/96	1	mg/kg	20U	--	--	--
SS-6 Area - E	SS6E Comp	Composite	08/19/96	1	mg/kg	39	--	--	--
SS-6 Area - W	SS6W Comp	Composite	08/19/96	1	mg/kg	42	--	--	--
SS-6 Area - C	SS6CENT Comp	Composite	08/19/96	1	mg/kg	53	--	--	--
PUR N	PUR N	Composite	08/20/96	Surface	mg/kg	71	--	--	--
PUR N	PUR N	Composite	08/21/96	1	mg/kg	140	--	--	--
PUR N	PUR E	Composite	08/20/96	Surface	mg/kg	520	--	--	--
PUR N	PUR W	Composite	08/20/96	Surface	mg/kg	150	--	--	--
PUR N	PUR S	Composite	08/20/96	Surface	mg/kg	73	--	--	--
Purifier	Subpurifier	Composite	08/21/96	>1	mg/kg	57	--	--	--

Notes:

[1] ft bgs = feet below ground surface

[2] mg/kg = milligram(s) per kilogram

[3] -- = Sample not analyzed for this compound

[4] Sludge sample was collected for waste disposal purposes. Metals reported in milligrams per liter; benzene, toluene, ethylbenzene, and xylene reported in micrograms per liter.

[5] Sampling location indicates area surrounding former October 1995 sampling Location (SS-x) where composite sample was collected.

[6] Composite sample from areas surrounding SS-4 and SS-7.

[7] Composite sample from areas surrounding SS-11 and S-S12.

[8] Sample COMP is a composite sample of samples collected at the Site on 6/1/1996.

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was analyzed for but was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table 2-3. Summary of Historical Analytical Data for Soil – BTEX Compounds

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	Benzene	Ethylbenzene	Toluene	Xylenes, total	m/p-Xylenes	o-Xylenes	Methyl-tert-butyl ether
Residential SRL[3]					**mg/kg**	**0.65**	**400**	**650**	**270**	**270**	**270**	**270**
Non Residential SRL[4]					**mg/kg**	**1.4**	**400**	**650**	**420**	**420**	**420**	**420**
SB-1	SB1-1.5-3	Discrete	10/25/95	1.5-3.0	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-1	SB1-4.5-6	Discrete	10/25/95	4.5-6.0	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-1	SB-1-9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-1	SB1-15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-2	SB2-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-3	SB3-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-4	SB4-0-1.5	Discrete	10/25/95	0-1.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-4	SB-4-3-4.5	Discrete	10/25/95	3.0-4.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-4	SB-4-9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-4	SB4-15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-5	SB5-9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-6	SB6-9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-6	SB6-15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-7	SB7-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-7	SB7-Dup-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-7	SB7-15.0-16	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-8	SB-8-9-10	Discrete	10/25/95	9.0-10.0	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-8	SB8-15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-8	SB8-20-21.5	Discrete	10/25/95	20.0-21.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-0-1.5	Discrete	10/25/95	0-1.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-3-4	Discrete	10/26/95	3.0-4.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-9	SB9-Dup-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
SB-10	SB10-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	0.025U	0.025U	0.025U	0.025U	--	--	0.025U
Oil Sump[5]	Sludge	Discrete	12/27/95	NA	µg/L	10U	22.5U	22.5U	180	--	--	--
SS-1 Area[6]	SS-1	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
SS-4/SS-7 Area[6,7]	SS4-7	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
SS-5 Area[6]	SS5	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
SS-6 Area[6]	SS6	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
SS-11/SS-12 Area[6,8]	BACK SS11-12	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U
Multiple[6,9]	COMP	Composite	6/1/1996	Surface	mg/kg	0.025U	0.025U	0.025U	--	0.025U	0.025U	0.12U

Notes:

[1] ft bgs = feet below ground surface

[2] mg/kg = milligram(s) per kilogram

[3] Cells highlighted in yellow indicate that the compound exceeded the 2007 residential soil remediation level (SRL).

[4] Cells highlighted in **red** indicate the compound exceeded the 2007 non-residential SRL.

[5] Sludge sample was collected for waste disposal purposes. Benzene, toluene, ethylbenzene, and xylene reported in micrograms per liter. VOCs were analyzed for and not detected in the Sludge sample.

[6] Sampling location indicates area surrounding former October 1995 sampling Location (SS-x) where composite sample was collected.

[7] Composite sample from areas surrounding SS-4 and SS-7

[8] Composite sample from areas surrounding SS-11 and S-S12

[9] Sample COMP is a composite sample of samples collected at the Site on 6/1/1996

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table 2-4. Summary of Historical Analytical Data for Soil – Metals and Reactive Sulfide

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Cyanide	Reactive Sulfide
Residential SRLs[3]					mg/kg	10	15000	39	120000	400	23	390	390	1200	NA
Non-Residential SRLs[4]					mg/kg	10	170000	510	1000000	800	310	5100	5100	12000	NA
SS-1	SS-1	Discrete	10/26/95	Surface	mg/kg	14.8	71	2	13.1	75.1	0.1U	1.5U	1.0U	0.5U	--
SS-2	SS-2	Discrete	10/26/95	Surface	mg/kg	13.2	268	3	9.2	81	0.1U	1.5U	1.0U	0.5U	--
SS-3	SS-3	Discrete	10/25/95	Surface	mg/kg	17.9	1.7	1.8	25.6	9.6	0.1U	8U	1.0U	1.5	--
SS-4	SS-4	Discrete	10/26/95	Surface	mg/kg	28.8	178	9.3	9.6	388	0.1	3U	1.1	3.3	--
SS-5	SS-5	Discrete	10/26/95	Surface	mg/kg	30.2	123	2.3	7.3	280	0.1	1.5U	1.2	0.5	--
SS-6	SS-6	Discrete	10/26/95	Surface	mg/kg	83.5	68	1.4	96.1	2,530	0.2	13U	1.9	22.8	--
SS-7	SS-7	Discrete	10/25/95	Surface	mg/kg	33.5	82.7	2.4	12.1	2,290	0.2	4U	1.8	14.8	--
SS-8	SS-8	Discrete	10/26/95	Surface	mg/kg	9.7	76.1	1.1	5.3	58.2	0.1U	2U	1.0U	0.5U	--
SS-9	SS-9	Discrete	10/26/95	Surface	mg/kg	11.4	140	4.3	5.4	85.9	0.1U	1.5U	1.0U	0.5U	--
SS-10	SS-10	Discrete	10/26/95	Surface	mg/kg	14.9	142	5.8	6.7	152	0.2	1.0U	1.0U	0.5	--
SS-11	SS-11	Discrete	10/25/95	Surface	mg/kg	16.8	91.9	2.6	6.6	73.5	0.1U	1.0U	1.0U	0.5U	--
SS-12	SS-12	Discrete	10/26/95	Surface	mg/kg	9.5	110	0.8	4.6	52.8	0.1U	1.0U	1.0U	0.5U	--
SS-13	SS-13	Discrete	10/26/95	Surface	mg/kg	10.4	166	2	8.9	70.7	0.1U	1.0U	1.0U	0.5U	--
SS-14	SS-14	Discrete	10/26/95	Surface	mg/kg	8.9	195	1.7	6.3	68.2	0.1U	1.0U	1.0U	0.5U	--
SB-1	SB-1 4.5-6	Discrete	10/25/95	4.5-6.0	mg/kg	34.1	29.8	0.5U	14.9	12.1	0.1U	1.0U	1.0U	0.5U	--
SB-1	SB-1 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	20	36.6	0.5U	4.8	10.8	0.1U	1.0U	1.0U	0.5U	--
SB-2	SB-2 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	42.1	8.9	0.5U	14.9	9.5	0.1U	1.0U	1.0U	0.5U	--
SB-3	SB-3 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	19.9	96.2	0.5U	4.2	10.4	0.1U	1.0U	1.0U	0.5U	--
SB-4	SB-4 0-1.5	Discrete	10/25/95	0-1.5	mg/kg	18.3	68.4	1.1	6.1	80.6	0.1U	1.0U	1.0U	0.7	--
SB-4	SB-4 3-4.5	Discrete	10/25/95	3.0-4.5	mg/kg	10	88.8	0.5U	4.6	5.2	0.1U	1.0U	1.0U	0.5U	--
SB-4	SB-4 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	26	30.8	0.5U	7.2	15.5	0.1U	1.0U	1.0U	0.5U	--
SB-5	SB-5 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	15.8	24.6	0.5U	4	7.6	0.1U	1.0U	1.0U	0.8	--
SB-6	SB-6 9-10.5	Discrete	10/25/95	9.0-10.5	mg/kg	22.6	23	0.5U	3.1	9	0.1U	1.0U	1.0U	22.7	--
SB-6	SB-6 15-16.5	Discrete	10/25/95	15.0-16.5	mg/kg	19.1	40	0.5U	42	4.5	0.1U	1.0U	1.0U	15.9	--
SB-7	SB-7 10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	18.3	197	0.5U	5.6	11	0.1U	1.0U	1.0U	0.5U	--
SB-7Dup	SB-7-Dup-10-11.5	Discrete	10/25/95	10.0-11.5	mg/kg	16.3	100	0.5U	12.2	5.3	0.1U	1.0U	1.0U	4	--
SB-8	SB-8 9-10	Discrete	10/25/95	9.0-10.0	mg/kg	27.7	37	0.5U	12	17.4	0.1U	1.0U	1.0U	0.5U	--
SB-8	SB-8 20-21.5	Discrete	10/25/95	20.0-21.5	mg/kg	8.7	26.3	0.5U	33	6.9	0.1U	1.0U	1.0U	10	--
SB-9	SB-9 9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	19.9	109	0.5U	9.3	10.1	0.1U	1.0U	1.0U	0.5U	--
SB-9	SB-9 15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	15.1	38	0.5U	4.6	8.9	0.1U	1.0U	1.0U	0.5U	--
SB-9Dup	SB-9-Dup-15-16.5	Discrete	10/26/95	15.0-16.5	mg/kg	14.2	25.7	0.5U	2.6	7.5	0.1U	1.0U	1.0U	0.5U	--
SB-10	SB10-9-10.5	Discrete	10/26/95	9.0-10.5	mg/kg	15.3	23.4	0.5U	2.7	6.4	0.1U	1.0U	1.0U	0.5U	--
Oil Sump[6]	Sludge	Discrete	12/27/95	NA	mg/l	1.0UT	0.6T	0.5UT	0.5UT	1.7T	0.1UT	1.0UT	1.0UT	--	--
Purifier	Purifier	Composite	3/20/96	<0.5	% sulfur	--	--	--	--	--	--	--	--	--	12.70
SS-1 Area[7]	SS-1	Composite	6/1/1996	Surface	mg/kg	10U/0.10UT	120	4.4	10	410	0.08U	5.0U	2.5U	--	--
SS-4/SS-7 Area[7,8]	SS4-7	Composite	6/1/1996	Surface	mg/kg	13/0.10UT	110	2.5U	8.1	140	0.08U	5.0U	2.5U	--	--
SS-5 Area[7]	SS5	Composite	6/1/1996	Surface	mg/kg	10U/0.10UT	85	2.5U	9.2	86	0.08U	5.0U	2.5U	--	--
SS-6 Area[7]	SS6	Composite	6/1/1996	Surface	mg/kg	19/0.10UT	100	3.1	20	1,100/0.10UT	0.13	5.0U	2.5U	--	--
SS-11/SS-12 Area[7,9]	BACK SS11-12	Composite	6/1/1996	Surface	mg/kg	10U/0.10UT	98	2.5U	6.7	75	0.08U	5.0U	2.5U	--	--
Multiple[7,10]	COMP	Composite	6/1/1996	Surface	mg/kg	12/0.10UT	92	2.5U	10	250	0.08U	5.0U	2.5U	--	--
Debris A	Debris A	Composite	08/19/96	Surface	mg/kg	18	--	--	--	44	--	--	--	--	--
Debris B	Debris B	Composite	08/19/96	Surface	mg/kg	14	--	--	--	13	--	--	--	--	--
Debris C	Debris C	Composite	08/19/96	Surface	mg/kg	19	--	--	--	100	--	--	--	--	--
Debris D	Debris D	Composite	08/19/96	Surface	mg/kg	17	--	--	--	12	--	--	--	--	--
Debris E	Debris E	Composite	08/20/96	Surface	mg/kg	17	--	--	--	41	--	--	--	--	--

Table 2-4. Summary of Historical Analytical Data for Soil – Metals and Reactive Sulfide

APS Douglas Former MGP Site, Douglas, Arizona

Location	Sample ID	Sample Type	Sample Date	Depth (ft bgs)[1]	Units[2]	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Cyanide	Reactive Sulfide
Residential SRLs[3]					mg/kg	10	15000	39	120000	400	23	390	390	1200	NA
Non-Residential SRLs[4]					mg/kg	10	170000	510	1000000	800	310	5100	5100	12000	NA
SS-4/SS-7 Area	SS4-7	Composite	08/21/96	>1	mg/kg	15	--	--	--	50	--	--	--	--	--
SS-5 Area7	SS5 Comp	Composite	08/19/96	>1	mg/kg	18	--	--	--	11	--	--	--	--	--
SS-6 Area - E	SS6E Comp	Composite	08/19/96	>1	mg/kg	18	--	--	--	11	--	--	--	--	--
SS-6 Area - W	SS6W Comp	Composite	08/19/96	>1	mg/kg	24	--	--	--	217	--	--	--	--	--
SS-6 Area - C	SS6CENT Comp	Composite	08/19/96	>1	mg/kg	23	--	--	--	199	--	--	--	--	--
PUR N	PUR N	Composite	08/21/96	Surface	mg/kg	11	--	--	--	91	--	--	--	--	--
Purifier	Subpurifier	Composite	08/21/96	Below Pad	mg/kg	15	--	--	--	15	--	--	--	--	--

Notes:

[1] ft bgs = feet below ground surface

[2] mg/kg = milligram(s) per kilogram

[3] Cells highlighted in **yellow** indicate that the compound exceeded the 2007 residential soil remediation level (SRL).

[4] Cells highlighted in **red** indicate the compound exceeded the 2007 non-residential SRL.

[5] -- = Sample not analyzed for this compound.

[6] Sludge sample was collected for waste disposal purposes. Metals reported in milligrams per liter.

[7] Sampling location indicates area surrounding former October 1995 sampling Location (SS-x) where composite sample was collected. Results presented as total metals/TCLP metals.

[8] Composite sample from areas surrounding SS-4 and SS-7

[9] Composite sample from areas surrounding SS-11 and S-S12

[10] Sample COMP is a composite sample of samples collected at the Site on 6/1/1996

U = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit.

UJ = The analyte was analyzed for, but was not detected above, the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation

T = toxicity characteristic leaching procedure (TCLP) used

Table 3-1. Proposed Sampling Locations and Analysis

APS Douglas Former MGP Site, Douglas, Arizona

Location	Description	Geotechnical Testing								Analytical Testing													
										Soil										Water[4]			
		Sample Depth (ft bgs)	Moisture Content	Sieve Analysis	Atterberg Limit	In Situ Density	Undrained Sheer Strength	FOC (ASTM DD4129-05)	Porosity	PAHs (EPA 8310 or 8270 SIM)	Total Metals (6010B/7471A)	Total VOCs (8260B)	PCB (EPA 8082)	Paint Filter (EPA 9095B)	Ignitability (SW846 Article 7.12)	ph (EPA 9045B)	Total Cyanide (EPA 9013/9014)	BTEX (8021B)	Total VOCs (8260B)	PAHs (8310)	Metals (200.7)
D-SB11	Gas Holder 1	1[1]								X	X	X	X	X	X	X	X				
		2.5								X	X	X									
		5	X	X	X	X				X	X	X	X	X	X	X	X				
		7.5								X	X										
		10	X	X	X	X	X			X	X										
		15								X	X										
		20[2]								X	X										
D-SB12	Gas Holder 2	1[1]								X	X	X	X	X	X	X	X				
		2.5								X	X	X									
		5								X	X	X	X	X	X	X	X				
		7.5	X	X	X	X				X	X										
		10								X	X										
		15	X	X	X	X				X	X										
		20[2]								X	X										
D-SB13	Meter House	1[1]								X	X	X									
		2.5	X	X						X	X	X	X	X	X	X	X				
		5								X	X										
		7.5								X	X										
		10								X	X										
		15								X	X										
		20[2]								X	X										

Table 3-1. Proposed Sampling Locations and Analysis

APS Douglas Former MGP Site, Douglas, Arizona

Location	Description	Geotechnical Testing								Analytical Testing													
										Soil										Water[4]			
		Sample Depth (ft bgs)	Moisture Content	Sieve Analysis	Atterberg Limit	In Situ Density	Undrained Sheer Strength	FOC (ASTM DD4129-05)	Porosity	PAHs (EPA 8310 or 8270 SIM)	Total Metals (6010B/7471A)	Total VOCs (8260B)	PCB (EPA 8082)	Paint Filter (EPA 9095B)	Ignitability (SW846 Article 7.12)	ph (EPA 9045B)	Total Cyanide (EPA 9013/9014)	BTEX (8021B)	Total VOCs (8260B)	PAHs (8310)	Metals (200.7)
D-SB14	South Generator House	1[1]								X	X	X	X	X	X	X	X				
		2.5								X	X										
		5	X	X	X	X				X	X										
		7.5								X	X										
		10	X	X	X	X				X	X										
		15								X	X										
		20[2]								X	X										
D-SB15	North Generator House	1[1]								X	X										
		2.5								X	X										
		5								X	X	X	X	X	X	X	X				
		7.5	X	X	X	X	X			X	X										
		10[2]								X	X										
D-SB16	Oil Tank/Sump	0[3]								X	X										
		2.5								X	X	X	X	X	X	X	X				
		5								X	X	X									
		7.5								X	X	X									
		10								X	X	X									
		15								X	X	X									
		20[2]								X	X	X									
D-SB17	PURS32/42	0[3]								X	X										
		2.5								X	X										

Table 3-1. Proposed Sampling Locations and Analysis

APS Douglas Former MGP Site, Douglas, Arizona

Location	Description	Geotechnical Testing								Analytical Testing												
										Soil									Water[4]			
		Sample Depth (ft bgs)	Moisture Content	Sieve Analysis	Atterberg Limit	In Situ Density	Undrained Sheer Strength	FOC (ASTM DD4129-05)	Porosity	PAHs (EPA 8310 or 8270 SIM)	Total Metals (6010B/7471A)	Total VOCs (8260B)	PCB (EPA 8082)	Paint Filter (EPA 9095B)	Ignitability (SW846 Article 7.12)	ph (EPA 9045B)	Total Cyanide (EPA 9013/9014)	BTEX (8021B)	Total VOCs (8260B)	PAHs (8310)	Metals (200.7)
D-SB17	PURS32/42	5								X	X	X	X	X	X	X	X				
		7.5								X	X										
		10								X	X										
		15								X	X										
		20[2]								X	X										
D-SB18	Area-A southwest	0[3]								X	X										
		2.5								X	X										
		5								X	X										
		7.5								X	X										
		10[2]								X	X										
D-SB19	Area-A southeast	0[3]								X	X										
		2.5	X	X	X					X	X	X	X	X	X	X	X				
		5								X	X										
		7.5	X	X	X	X				X	X										
		10								X	X										
		15								X	X										
		20[2]								X	X										
D-SB20	Area-A northeast	0[3]								X	X										
		2.5								X	X										
		5								X	X										
		7.5								X	X										

Table 3-1. Proposed Sampling Locations and Analysis

APS Douglas Former MGP Site, Douglas, Arizona

Location	Description	Geotechnical Testing								Analytical Testing												
										Soil										Water[4]			
		Sample Depth (ft bgs)	Moisture Content	Sieve Analysis	Atterberg Limit	In Situ Density	Undrained Sheer Strength	FOC (ASTM DD4129-05)	Porosity	PAHs (EPA 8310 or 8270 SIM)	Total Metals (6010B/7471A)	Total VOCs (8260B)	PCB (EPA 8082)	Paint Filter (EPA 9095B)	Ignitability (SW846 Article 7.12)	ph (EPA 9045B)	Total Cyanide (EPA 9013/9014)	BTEX (8021B)	Total VOCs (8260B)	PAHs (8310)	Metals (200.7)
D-SB21	SS-5	10[2]								X	X											
		0[3]								X	X											
		2.5								X	X	X	X	X	X	X	X					
		5	X	X	X	X				X	X											
		7.5								X	X											
		10								X	X											
		15								X	X											
		20[2]	X	X	X	X	X			X	X											
D-SB22	SS-10 PAH and background metals	0[3]								X	X											
		2.5	X	X	X					X	X											
		5	X	X	X					X	X											
		7.5								X	X											
		10	X	X	X					X	X											
		15								X	X											
		20[2]								X	X											
D-SB23	SS-14	0[3]								X	X											
		2.5								X	X											
		5								X	X											
		7.5								X	X											
		10[2]								X	X											

Table 3-1. Proposed Sampling Locations and Analysis

APS Douglas Former MGP Site, Douglas, Arizona

Location	Description	Geotechnical Testing								Analytical Testing												
										Soil										Water[4]			
		Sample Depth (ft bgs)	Moisture Content	Sieve Analysis	Atterberg Limit	In Situ Density	Undrained Sheer Strength	FOC (ASTM DD4129-05)	Porosity	PAHs (EPA 8310 or 8270 SIM)	Total Metals (6010B/7471A)	Total VOCs (8260B)	PCB (EPA 8082)	Paint Filter (EPA 9095B)	Ignitability (SW846 Article 7.12)	ph (EPA 9045B)	Total Cyanide (EPA 9013/9014)	BTEX (8021B)	Total VOCs (8260B)	PAHs (8310)	Metals (200.7)
D-SB24	Purifiers	0[3]								X	X											
		2.5								X	X											
		5	X	X	X	X				X	X											
		7.5								X	X											
		10								X	X											
		15								X	X											
		20[2]	X	X	X	X				X	X											
D-SB25	Area-A, Northwest Background Metals and Groundwater	0[3]								X	X	X	X	X	X	X	X					
		2.5								X	X	X	X	X	X	X	X					
		5	X	X	X	X				X	X											
		7.5						X	X	X	X											
		10	X	X		X		X	X	X	X											
		15								X												
		20	X	X	X	X		X	X	X												
		25								X	X											
		30						X	X	X												
		40	X	X		X				X												
		50[4]						X	X	X	X											
		60[4]	X	X	X	X				X												
		70[4]						X	X	X		X						X	X	X	X	

Table 3-1. Proposed Sampling Locations and Analysis

APS Douglas Former MGP Site, Douglas, Arizona

Location	Description	Geotechnical Testing								Analytical Testing												
										Soil										Water[4]			
		Sample Depth (ft bgs)	Moisture Content	Sieve Analysis	Atterberg Limit	In Situ Density	Undrained Sheer Strength	FOC (ASTM DD4129-05)	Porosity	PAHs (EPA 8310 or 8270 SIM)	Total Metals (6010B/7471A)	Total VOCs (8260B)	PCB (EPA 8082)	Paint Filter (EPA 9095B)	Ignitability (SW846 Article 7.12)	ph (EPA 9045B)	Total Cyanide (EPA 9013/9014)	BTEX (8021B)	Total VOCs (8260B)	PAHs (8310)	Metals (200.7)
D-SB26	Southeast Background Metals and Groundwater	0[3]								X	X										
		2.5								X	X										
		5	X	X		X		X	X	X	X										
		7.5						X	X	X	X										
		10						X	X	X	X										
		15	X	X	X	X				X	X										
		20	X	X		X		X	X	X	X										
		25								X	X										
		30	X	X	X	X		X	X	X											
		40								X											
		50[4]	X	X	X	X		X	X	X	X										
		60[4]	X	X		X				X											
		70[4]	X	X		X		X	X	X		X						X	X	X	X
D-SB27	Southwest Background Metals and Groundwater	0[3]								X	X										
		2.5								X	X										
		5								X	X										
		7.5	X	X	X	X				X	X										
		10						X	X	X	X										
		15	X	X	X	X				X	X										
		20						X	X	X	X										

Table 3-1. Proposed Sampling Locations and Analysis

APS Douglas Former MGP Site, Douglas, Arizona

Location	Description	Geotechnical Testing								Analytical Testing												
										Soil										Water[4]			
		Sample Depth (ft bgs)	Moisture Content	Sieve Analysis	Atterberg Limit	In Situ Density	Undrained Sheer Strength	FOC (ASTM DD4129-05)	Porosity	PAHs (EPA 8310 or 8270 SIM)	Total Metals (6010B/7471A)	Total VOCs (8260B)	PCB (EPA 8082)	Paint Filter (EPA 9095B)	Ignitability (SW846 Article 7.12)	ph (EPA 9045B)	Total Cyanide (EPA 9013/9014)	BTEX (8021B)	Total VOCs (8260B)	PAHs (8310)	Metals (200.7)
		25								X	X										
		30						X	X	X											
		40								X											
		50[4]	X	X	X			X	X	X	X										
		60[4]								X											
		70[4]						X	X	X		X						X	X	X	X
D-SB28 and D-SB29	Southwest Background Metals	0[3]								X	X										
		5	X	X	X					X	X	X	X	X	X	X	X				
		10	X	X	X					X	X										
		15	X	X	X					X	X										
		20[2]								X	X										
D-SB30	Northeast Background Metals	0[3]								X	X										
		5								X	X	X	X	X	X	X	X				
		10	X	X	X					X	X										
		15	X	X	X					X	X										
		20[2]	X	X	X					X	X										

Table 3-1. Proposed Sampling Locations and Analysis

APS Douglas Former MGP Site, Douglas, Arizona

Location	Description	Geotechnical Testing								Analytical Testing												
										Soil										Water[4]			
		Sample Depth (ft bgs)	Moisture Content	Sieve Analysis	Atterberg Limit	In Situ Density	Undrained Sheer Strength	FOC (ASTM DD4129-05)	Porosity	PAHs (EPA 8310 or 8270 SIM)	Total Metals (6010B/7471A)	Total VOCs (8260B)	PCB (EPA 8082)	Paint Filter (EPA 9095B)	Ignitability (SW846 Article 7.12)	ph (EPA 9045B)	Total Cyanide (EPA 9013/9014)	BTEX (8021B)	Total VOCs (8260B)	PAHs (8310)	Metals (200.7)
D-SB31 through D-SB34	North Background Metals	0[3]								X	X										
		5	X	X	X					X	X										
		10	X	X	X					X	X										
		15	X	X	X					X	X										
		20[2]								X	X										
D-SB35	Northwest Background Metals	0[3]								X	X										
		5	X	X	X					X	X	X	X	X	X	X	X				
		10	X	X	X					X	X										
		15								X	X										
		20[2]	X	X	X					X	X										

Notes:

[1] Sample collected immediately under foundation structure or concrete pad.

[2] Analytical sample held for pending analysis.

[3] Surface soil samples collected prior to drill rig mobilization.

[4] If groundwater is encountered, monitoring wells will be installed and groundwater samples will be collected and analyzed for polynuclear aromatic hydrocarbons (PAHs) (EPA Method 8310), benzene, toluene, ethylbenzene, and xylenes (BTEX) (EPA Method 8221B), Metals (EPA Method 200.7), and total volatile organic compounds (VOCs) (EPA Method 8260B). A notice of intent will be submitted to the Arizona Department of Water Resources using form 55-43B.

EPA = U.S. Environmental Protection Agency

FOC = fraction organic carbon

PCB = polychlorinated biphenyl

Table 4-1. Summary of Sample Handling Requirements

APS Douglas Former MGP Site, Douglas, Arizona

Analyte	Method	Matrix	Container Type	Preservative
Soil Analyses				
Chemical Analysis				
PAH	EPA 8310 or 8270 SIM	Soil	One 8 oz. glass jar or brass sleeve	4°C
Total VOCs (BTEX)	EPA 8260B	Soil	Methanol Kit (10 grams soil/10 mL MeOH) or Encore	Methanol/4°C
Total Cyanide	EPA 9013/9014	Soil	One 8 oz. glass jar or brass sleeve	4°C
Fraction Organic Carbon	ASTM D4129-05	Soil	One 8 oz. glass jar or brass sleeve	4°C
Geotechnical Analysis				
Moisture Content		Soil	Brass sleeve or Grab	None
% Passing 200 Sieve		Soil	Brass sleeve or Grab	None
Atterberg Limit		Soil	Brass sleeve or Grab	None
In Situ Density		Soil	Brass sleeve	None
Shear Strength		Soil	Brass sleeve	None
Dry Bulk Density		Soil	Brass sleeve	None
Waste Characterization and Investigation-derived Waste (IDW) Analyses				
PAH	EPA 8310 or 8270 SIM	Solid Liquid[1]	One 8 oz. glass jar or brass sleeve Two 500-ml amber glass jars	4°C 4°C
RCRA 8 Total Metals	EPA 6010B/7471A	Soil	One 8 oz. glass jar or brass sleeve	4°C
Total Cyanide	EPA 9013/9014	Solid	One 8 oz. glass jar or brass sleeve	4°C
PCB	EPA 8082	Solid	One 8 oz. glass jar or brass sleeve	4°C
Total VOCs	EPA 8260B	Soil	Methanol Kit (10 grams soil/10 mL MeOH) or Encore	Methanol/4°C
		Liquid[1]	Three 40-mL VOA vials	HCL/4°C
Corrosivity by pH	EPA 9045B	Solid Liquid[1]	One 8 oz. glass jar or brass sleeve One 500 mL poly	4°C 4°C
Paint Filter	EPA 9095	Solid	One 8 oz. glass jar or brass sleeve	4°C
Ignitability	SW846 Article 7.1.2	Solid Liquid[1]	One 8 oz. glass jar or brass sleeve Three 40-mL VOA vials	4°C 4°C

Notes:

[1] Liquid Environmental Solutions will sample and analyze IDW water

°C = degrees Celsius

BTEX = benzene, toluene, ethylbenzene, and xylenes

EPA = U.S. Environmental Protection Agency

HCL = hydrochloric acid

HNO3 = nitric acid

MeOH = methanol

mL = milliliter(s)

NaOH = sodium hydroxide

oz. = ounce

PAH = polynuclear aromatic hydrocarbon

PCB = polychlorinated biphenyl

RCRA = Resource Conservation and Recovery Act

VOA = volatile organic analysis

VOC = volatile organic compound

Table 4-2. Quality Control Sample Type Abbreviations

APS Douglas Former MGP Site, Douglas, Arizona

Field QC Type Name	QC Type Codes
Field Duplicate	FD
Trip Blank	TB
Field Blank	FB
Ambient Blank	AB
Equipment Blank	EB
Split Sample	SS
Field Spike	FS

Notes:

QC = Quality Control

Table 2-5. ATSDR Historical Contaminant Concentrations in Offsite Residential Soil (Phelps Dodge Site

APS Douglas Former MGP Site, Douglas, Arizona

Contaminant	Maximum Concentration (mg/kg)	Mean Concentration (mg/kg)	Year
Lead[1]	1,170	254	1985
Lead[2]	564	172	1989
Arsenic[2]	35.8	15	1989

[1] ATSDR. 1995. Reference 4 “Selected Reports on Douglas, AZ, maintained by the Office of Risk Assessment, ADEQ, Phoenix, AZ, 1991”. Based on 52 surface samples collected from a widespread area in Douglas and collected less than 3 inches below ground surface.

[2] ATSDR. 1995. Reference 45 “Selected Reports on the Phelps-Dodge site in Douglas, Arizona maintained by the EPA, Region IX. 1973-1994”. Based on seven surface samples ranging 1 to 6 miles from the Phelps Dodge site and collected less than 3 inches below ground surface.

mg/kg = milligram(s) per kilogram

Table 2-6. ATSDR Historical Groundwater Concentrations

APS Douglas Former MGP Site, Douglas, Arizona

Contaminant	Maximum Concentration (mg/L)		Arizona Aquifer Water Quality Standard[1]
	Offsite	Onsite	Standard
Arsenic	0.001	0.0432	0.05
Barium	0.08	ND	2
Cadmium	0.002	ND	0.005
Chromium	0.003	ND	0.1
Lead	0.02	0.0027	0.05
Mercury	0.0001	ND	0.002
Selenium	0.023	ND	0.05
Silver	0.003	ND	NA
Zinc	0.08	ND	NA

Source: ATSDR, 1995

[1] Arizona Aquifer Water Quality Standards source: Arizona Administrative Code R18-11-406.A, December 31, 2016. Accessed July 30, 2019.

Groundwater samples collected and tested by ADEQ in 1984 from the Douglas municipal city well No. 6 (referenced as offsite in Table 2-6) and from a Phelps Dodge well (referenced as onsite in Table 2-6)

mg/L = milligram(s) per liter

NA = not available

ND = not detected

Figures

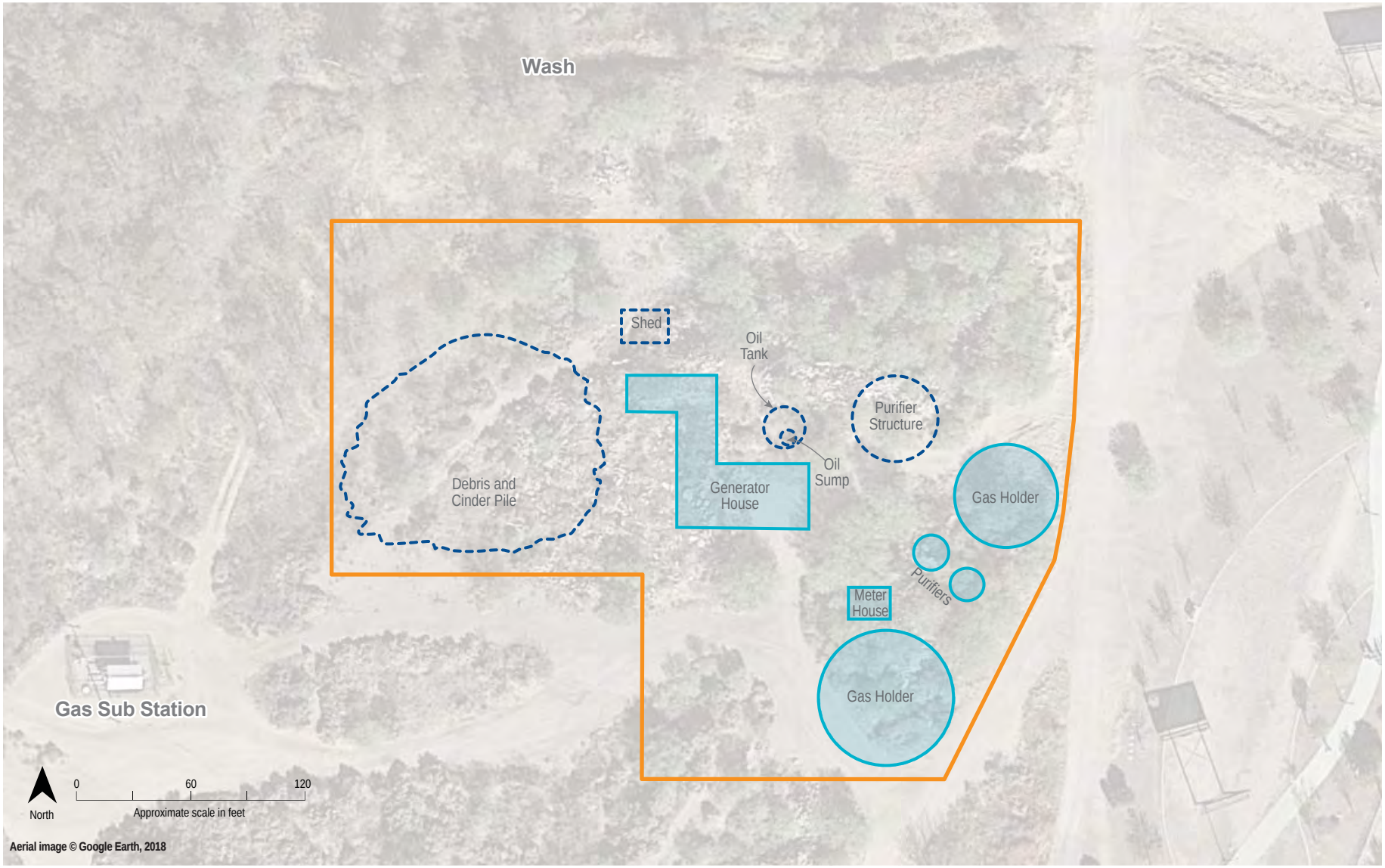
North

0 500 1,000

Approximate scale in feet

Figure 1-1. Site Location Map
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

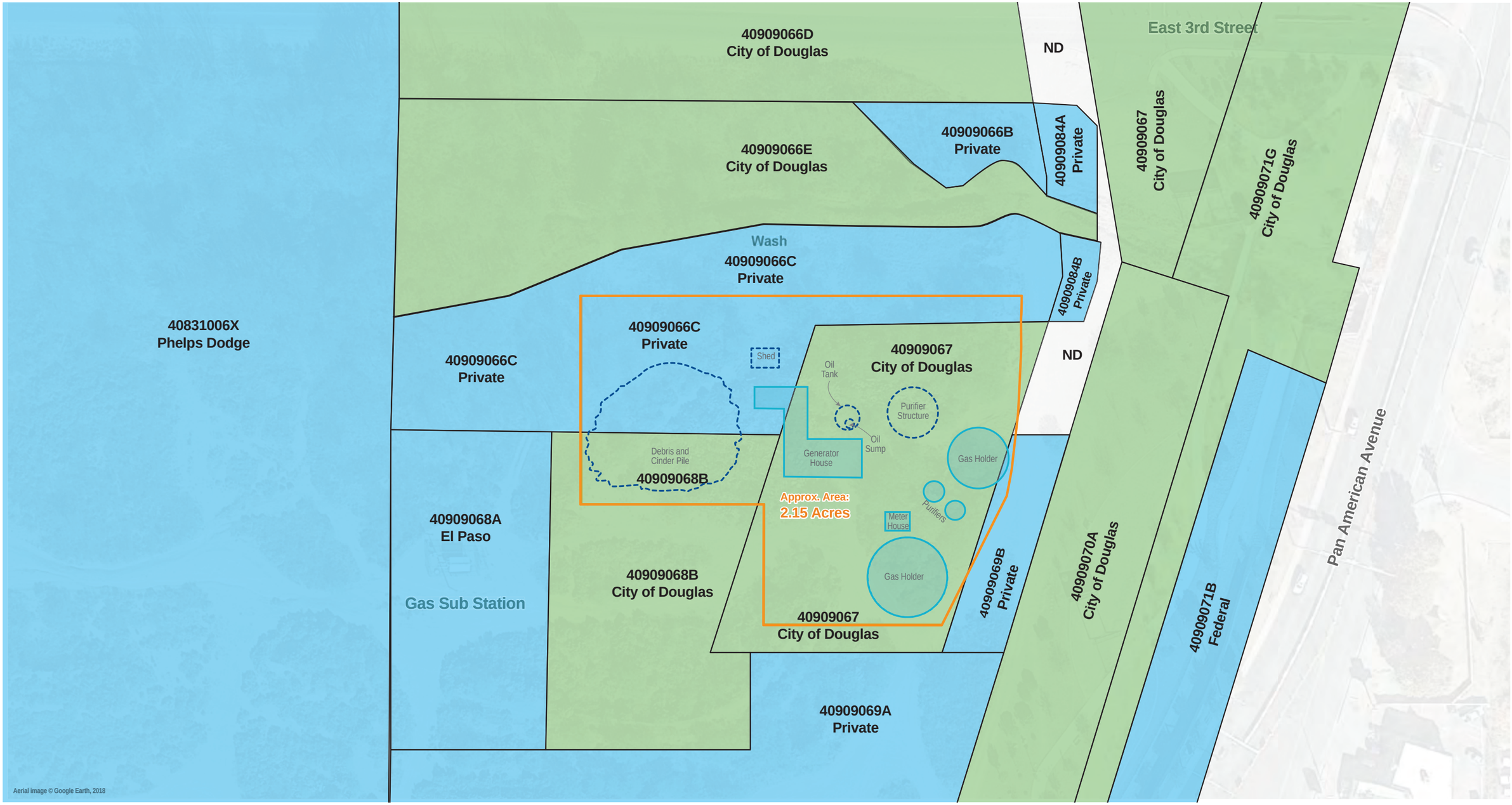


LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed

Figure 1-2. Fomer Structures Map
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed

Note: Site location is approximate and based on available historical documents.

- 40909067 — Parcel boundary and parcel number
- City of Douglas owned parcels
- Privately owned parcels

ND = No Data

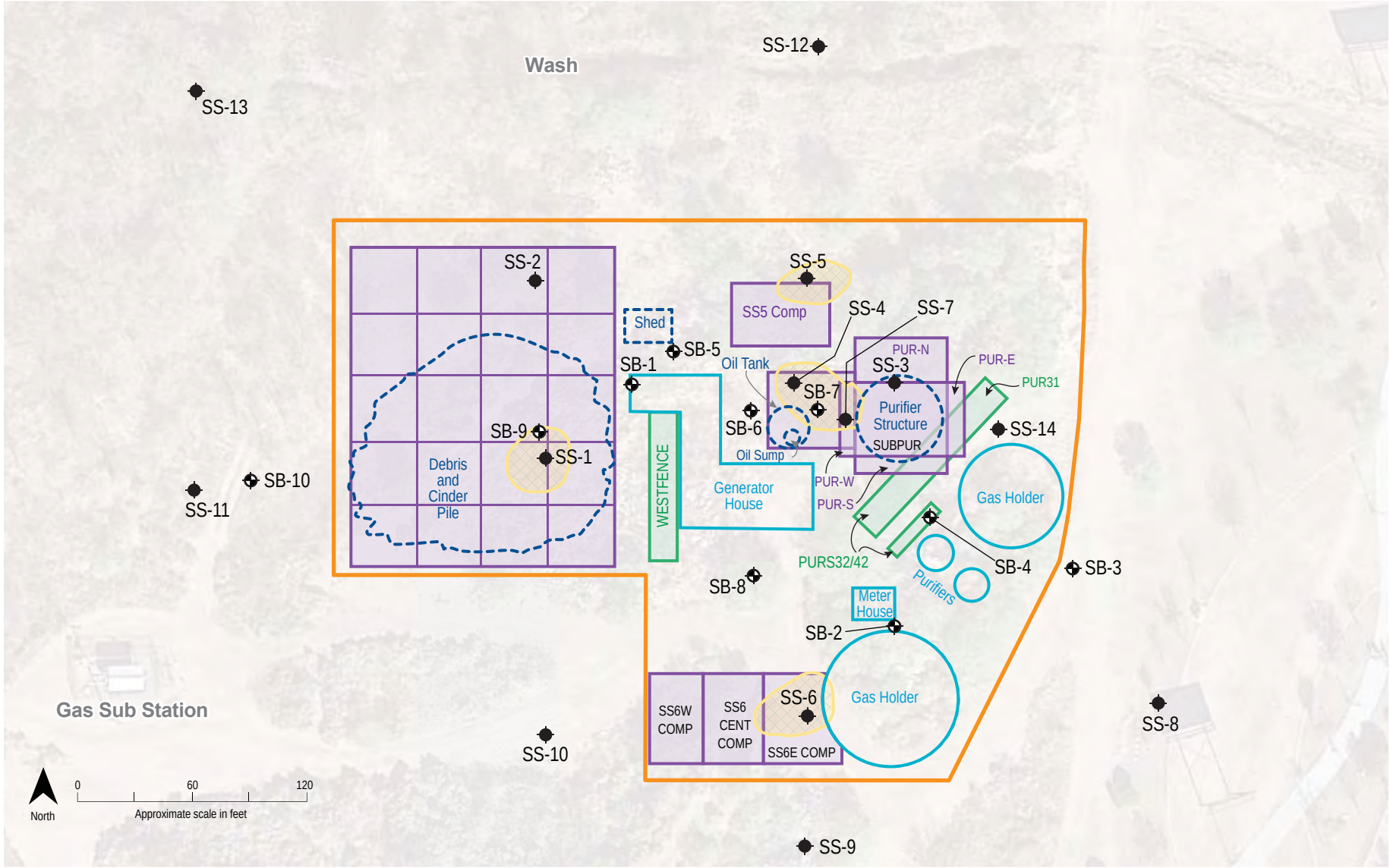
North

0 60 120

Approximate scale in feet

Figure 1-3. Parcel Map
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- Composite surface soil sampling conducted June 1996 (before excavation activities)
- Phase I composite surface soil sampling conducted August 1996 (after Phase I excavation activities)
- Phase II composite subsurface soil sampling conducted November 1996 (after Phase II excavation activities)

Figure 2-1. Previous Investigation Sampling Locations
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
SS-3	Surface
SS-8	Surface
SS-9	Surface
SS-11	Surface
SS-12	Surface
SS-13	Surface
SB-1	4.5-6, 9-10.5
SB-2	9-10.5
SB-3	9-10.5
SB-4	3-4.5, 9-10.5
SB-5	9-10.5
SB-6	9-10.5, 15-16.5
SB-7	10-11.5
SB-8	9-10, 20-21.5
SB-9	3-4, 9-10.5, 15-16.5
SB10	9-10.5
Debris B-2	Surface (composite)
Debris C-2	Surface (composite)
Debris D-2	Surface (composite)
Debris E-2	Surface (composite)
PUR N-B	1
SUBPUR B	1
PURE31	1
WESTFENCE	Surface
SS4-7	1
SS5	1

Table provides sampling depths for samples that did not contain concentrations of PAHs above SRLs

SS-2

Sample Depth (ft bgs)	Surface	Surface
Sample Type	Discrete	Composite*
Benzo(a)pyrene	1.8D	0.6

*Composite samples collected after removal of debris pile, identified as debris B-2.

SS-5 Comp

Sample Depth (ft bgs)	1
Sample Type	Comp
Benzo(a)anthracene	0.2
Benzo(a)pyrene	0.5
Benzo(b)fluoranthene	0.2
Benzo(k)fluoranthene	0.1
Dibenzo(a,h)anthracene	0.25U
Indeno(1,2,3-cd)pyrene	0.3

SS-5

Sample Depth (ft bgs)	Surface	Surface
Sample Type	Discrete	Comp
Benzo(a)anthracene	160D	Not Analyzed
Benzo(a)pyrene	230D	Not Analyzed
Benzo(b)fluoranthene	170D	Not Analyzed
Benzo(k)fluoranthene	93D	Not Analyzed
Dibenzo(a,h)anthracene	8.6D	Not Analyzed
Indeno(1,2,3-cd)pyrene	160D	Not Analyzed

SS-4

Sample Depth (ft bgs)	Surface	1*
Sample Type	Discrete	Comp
Benzo(a)pyrene	4.7D	0.4
Indeno(1,2,3-cd)pyrene	8.2D	0.3

*Composite sample (SS-4-7) from SS4/SS7 areas

SS-7

Sample Depth (ft bgs)	Surface	1*
Sample Type	Discrete	Comp
Benzo(a)pyrene	5.6D	0.4
Indeno(1,2,3-cd)pyrene	8.6D	0.3

*Composite sample (SS-4-7) from SS4/SS7 areas

Debris A-2

Sample Depth (ft bgs)	Surface
Sample Type	Comp
Benzo(a)pyrene	0.7

SS-14

Sample Depth (ft bgs)	Surface
Sample Type	Discrete
Benzo(a)pyrene	0.76D

SB-4 (1.5, 4.5, 10.5)

Sample Depth (ft bgs)	0-1.5	3-4.5
Sample Type	Discrete	Comp
Benzo(a)pyrene	4.5D	0.017U

PURS32/42 (composite)

Sample Depth (ft bgs)	1	2.5
Sample Type	Comp	Comp
Benzo(a)pyrene	1.8	1.5

PURS31/41 (composite)

Sample Depth (ft bgs)	1	2.5
Sample Type	Comp	Comp
Benzo(a)anthracene	6.9	0.1U
Benzo(a)pyrene	6.6	0.1U

SS-1

Sample Depth (ft bgs)	Surface	Surface
Sample Type	Discrete	Composite*
Benzo(a)anthracene	17D	0.03
Benzo(a)pyrene	33D	0.07
Benzo(b)fluoranthene	21D	0.03
Dibenzo(a,h)anthracene	0.75	0.05U
Indeno(1,2,3-cd)pyrene	25D	0.05

*Composite samples collected after removal of debris pile, identified as debris D-2.

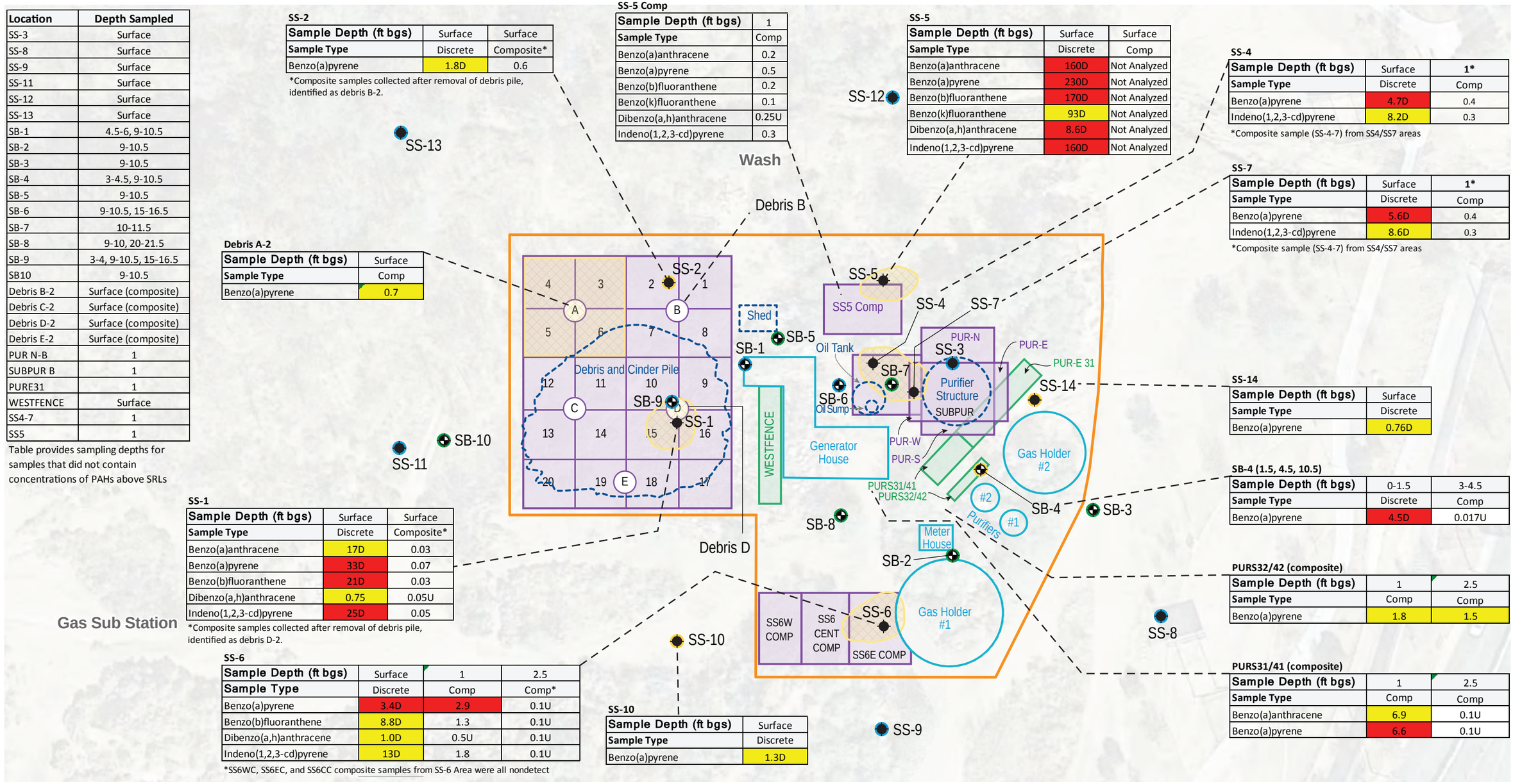
SS-6

Sample Depth (ft bgs)	Surface	1	2.5
Sample Type	Discrete	Comp	Comp*
Benzo(a)pyrene	3.4D	2.9	0.1U
Benzo(b)fluoranthene	8.8D	1.3	0.1U
Dibenzo(a,h)anthracene	1.0D	0.5U	0.1U
Indeno(1,2,3-cd)pyrene	13D	1.8	0.1U

*SS6WC, SS6EC, and SS6CC composite samples from SS-6 Area were all nondetect

SS-10

Sample Depth (ft bgs)	Surface
Sample Type	Discrete
Benzo(a)pyrene	1.3D



LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Composite surface soil sampling conducted June, 1996.
- Phase I composite surface soil sampling conducted August, 1996.
- Phase II composite subsurface soil sampling conducted November, 1996
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- At least one sample from sampling locations was analyzed for PAH. No PAH were detected.
- At least one sample from sampling locations was analyzed for PAH. PAH were detected, but were below residential and non-residential SRLs.
- At least one sample from sampling locations was analyzed for PAH. PAH were detected above residential SRLs.

North

0 60 120

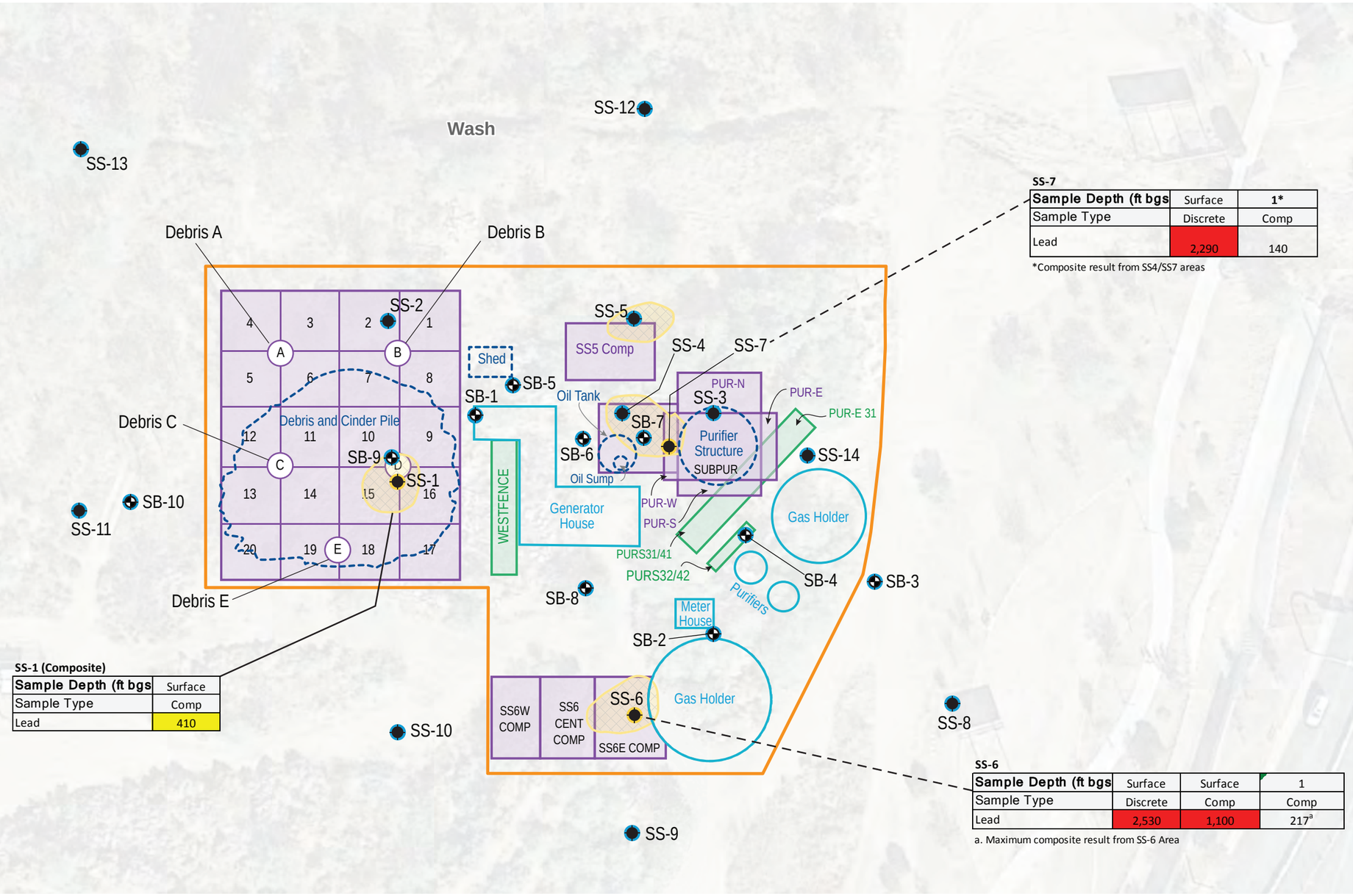
Approximate scale in feet

Figure 2-2. Polynuclear Aromatic Hydrocarbons (PAHs) in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
SS-2	Surface
SS-3	Surface
SS-4	Surface
SS-5	Surface (Discrete and Composite)
SS5 Comp	1
SS4-7 (SS-4 and SS-7	Surface (composite), 1
SS-8	Surface
SS-9	Surface
SS-10	Surface
SS-11	Surface
SS-12	Surface
BACK SS11-12	Surface (composite)
SS-13	Surface
SS-14	Surface
SB-1	4.5-6, 9-10.5
SB-2	9-10.5
SB-3	9-10.5
SB-4	0-1.5, 3-4.5, 9-10.5
SB-5	9-10.5
SB-6	9-10.5, 15-16.5
SB-7	10-11.5
SB-8	9-10, 20-21.5
SB-9	9-10.5, 15-16.5
SB10	9-10.5
Debris A	Surface (composite)
Debris B	Surface (composite)
Debris C	Surface (composite)
Debris D	Surface (composite)
Debris E	Surface (composite)
PUR N	>1 (Estimated)
Subpurifier	Below pad

Notes:
1. Samples and sampling depths for sample locations except SS-1



SS-7

Sample Depth (ft bgs)	Surface	1*
Sample Type	Discrete	Comp
Lead	2,290	140

*Composite result from SS4/SS7 areas

SS-1 (Composite)

Sample Depth (ft bgs)	Surface
Sample Type	Comp
Lead	410

SS-6

Sample Depth (ft bgs)	Surface	Surface	1
Sample Type	Discrete	Comp	Comp
Lead	2,530	1,100	217[a]

a. Maximum composite result from SS-6 Area

LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Composite surface soil sampling conducted June, 1996.
- Phase I composite surface soil sampling conducted August, 1996.
- Phase II composite subsurface soil sampling conducted November, 1996
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- At least one sample from sampling locations was analyzed for lead. Lead was detected, but was below residential and non-residential SRLs.
- At least one sample from sampling locations was analyzed for lead. Lead was detected above residential SRL

North

0 60 120

Approximate scale in feet

Figure 2-3. Lead in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
SS-8	Surface, 20-21.5
SS-12	Surface
SS-14	Surface
SS-1 Area	Surface
SS-5 Area	Surface
SS-11/SS-12 Area	Surface

Table provides sampling depths for samples that did not contain concentrations of arsenic above residential and non-residential SRLs (10 mg/kg)

SS-13 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	10.4

SB-1 - Discrete

Sample Depth (ft bgs)	4.5-6	9-10.5
Arsenic	34.1	20

SS-2 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	13.2

SB-5 - Discrete

Sample Depth (ft bgs)	9-10.5
Arsenic	15.8

SS-4 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	28.8

SS-4/SS-7 Area - Composite

Sample Depth (ft bgs)	Surface	>1
Arsenic	13	15

SS-5 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	30.2

SS-5 Comp - Composite

Sample Depth (ft bgs)	>1
Arsenic	18

SB-7 - Discrete

Sample Depth (ft bgs)	10-11.5
Arsenic	18.3

SS-7 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	33.5

PUR-N - Composite

Sample Depth (ft bgs)	Surface
Arsenic	11

SS-3 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	17.9

Purifier - Composite

Sample Depth (ft bgs)	Below Pad
Arsenic	15

Debris A - Composite

Sample Depth (ft bgs)	Surface
Arsenic	18

Debris B - Composite

Sample Depth (ft bgs)	Surface
Arsenic	14

SB-9 - Discrete

Sample Depth (ft bgs)	9-10.0	15-16.5
Arsenic	19.9	15.1

Debris D - Composite

Sample Depth (ft bgs)	Surface
Arsenic	17

Debris C - Composite

Sample Depth (ft bgs)	Surface
Arsenic	19

SB-10 - Discrete

Sample Depth (ft bgs)	9-10.5
Arsenic	15.3

SS-11 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	16.8

Debris D - Composite

Sample Depth (ft bgs)	Surface
Arsenic	17

SS-1 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	14.8

SB-6 - Discrete

Sample Depth (ft bgs)	9-10.5	15-16.5
Arsenic	22.6	19.1

SB-8 - Discrete

Sample Depth (ft bgs)	9-10.0	20-21.5
Arsenic	27.7	8.7

SS-10 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	14.9

SS6 Area - W - Composite

Sample Depth (ft bgs)	>1
Arsenic	24

SS6 Area - C - Composite

Sample Depth (ft bgs)	>1
Arsenic	23

SS6 Area - Composite

Sample Depth (ft bgs)	Surface
Arsenic	19

SS-9 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	11.4

SB-4 - Discrete

Sample Depth (ft bgs)	0-1.5	3-4.5	9-10.5
Arsenic	18.3	10	26

SB-3 - Discrete

Sample Depth (ft bgs)	9-10.5
Arsenic	19.9

SB-2 - Discrete

Sample Depth (ft bgs)	9-10.5
Arsenic	42.1

SS-6 - Discrete

Sample Depth (ft bgs)	Surface
Arsenic	83.5

SS6 Area - E - Composite

Sample Depth (ft bgs)	>1
Arsenic	18

Multiple - Composite (SS-1, SS4-7, SS-5, and SS-7)

Sample Depth (ft bgs)	Surface
Arsenic	12

Multiple composite sample of composite samples SS-1, SS4-7, SS-5, and SS-7.

Gas Sub Station

Wash

SS-12

SS-13

SS-11

SS-10

SS-9

SS-8

SB-10

SB-11

SB-8

SB-2

SB-3

SB-4

SB-5

SB-1

SB-6

SB-7

SS-1

SS-2

SS-3

SS-4

SS-5

SS-6

SS-7

SS-14

SS5 Comp

Shed

Oil Tank

Oil Sump

Debris and Cinder Pile

WESTFENCE

Generator House

PUR-N

PUR-E

PUR-E 31

PUR-W

PUR-S

PURS31/41

PURS32/42

Purifier Structure

SUBPUR

Purifiers

#1

#2

Gas Holder #1

Gas Holder #2

Meter House

SS6W COMP

SS6 CENT COMP

SS6E COMP

A

B

C

D

E

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Composite surface soil sampling conducted June, 1996.
- Phase I composite surface soil sampling conducted August, 1996.
- Phase II composite subsurface soil sampling conducted November, 1996
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- At least one sample from sampling locations was analyzed for arsenic. No arsenic was detected.
- At least one sample from sampling locations was analyzed for arsenic. Arsenic was detected, but was below residential and non-residential SRLs.
- At least one sample from sampling locations was analyzed for arsenic. Arsenic was detected above residential SRL.

North

0 60 120

Approximate scale in feet

Figure 2-4. Arsenic in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

Location	Depth Sampled
SB-1	4.5-6, 9-10.5, 15-16.5
SB-2	9-10.5
SB-3	9-10.5
SB-5	9-10.5
SB-6	9-10.5, 15-16.5
SB-7	10-11.5, 15-16
SB-9	0-1.5, 3-4, 9-10.5, 15-16.5
SB10	9-10.5
Debris 1	Surface (composite)
Debris 5	Surface (composite)
Debris 6	Surface (composite)
Debris 7	Surface (composite)
Debris 8	Surface (composite)
Debris 10	Surface (composite)
Debris 11	Surface (composite)
Debris 14	Surface (composite)
Debris 15	Surface (composite)
Debris 16	Surface (composite)
Debris 17	Surface (composite)
Debris 20	Surface (composite)
SS4-7	1
SS5 Comp	1

This table represents depths of TPH analyses that were below the laboratory reporting limit.

BACK SS11-12 - Composite

Sample Depth (ft bgs)	Surface
TPH	110

SS4-7 - Composite

Sample Depth (ft bgs)	Surface
TPH	270

Debris 3 (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	50	20U

Debris 2 - Composite

Sample Depth (ft bgs)	Surface
TPH	23

Debris 9 (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	73	20U

SS5 - Composite

Sample Depth (ft bgs)	Surface
TPH	480

PUR N - (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	71	140

SB-1 (3, 6, 10.5, 16.5)

Sample Depth (ft bgs)	1.5-3
TPH	780

Subpurifier - Composite

Sample Depth (ft bgs)	Surface
TPH	57

Debris 4 (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	590	20U

Debris 12 - Composite

Sample Depth (ft bgs)	Surface
TPH	24

PUR E - Composite

Sample Depth (ft bgs)	Surface
TPH	520

Debris 13 - Composite

Sample Depth (ft bgs)	Surface
TPH	27

PUR W - Composite

Sample Depth (ft bgs)	Surface
TPH	150

PUR S - Composite

Sample Depth (ft bgs)	Surface
TPH	73

Debris 19 (Surface, 1) - Composite

Sample Depth (ft bgs)	Surface	1
TPH	60	20U

SB-4 (1.5, 4.5, 10.5, 16.5)

Sample Depth (ft bgs)	0-1.5	3-4.5
TPH	4,000	24

Debris 18 - Composite

Sample Depth (ft bgs)	Surface
TPH	28

SS-1 - Composite

Sample Depth (ft bgs)	Surface
TPH	40

SS6 - Composite

Sample Depth (ft bgs)	Surface
TPH	780

SB-8 (10, 16.5, 21.5)

Sample Depth (ft bgs)	9-10
TPH	26

SS6W Comp - Composite

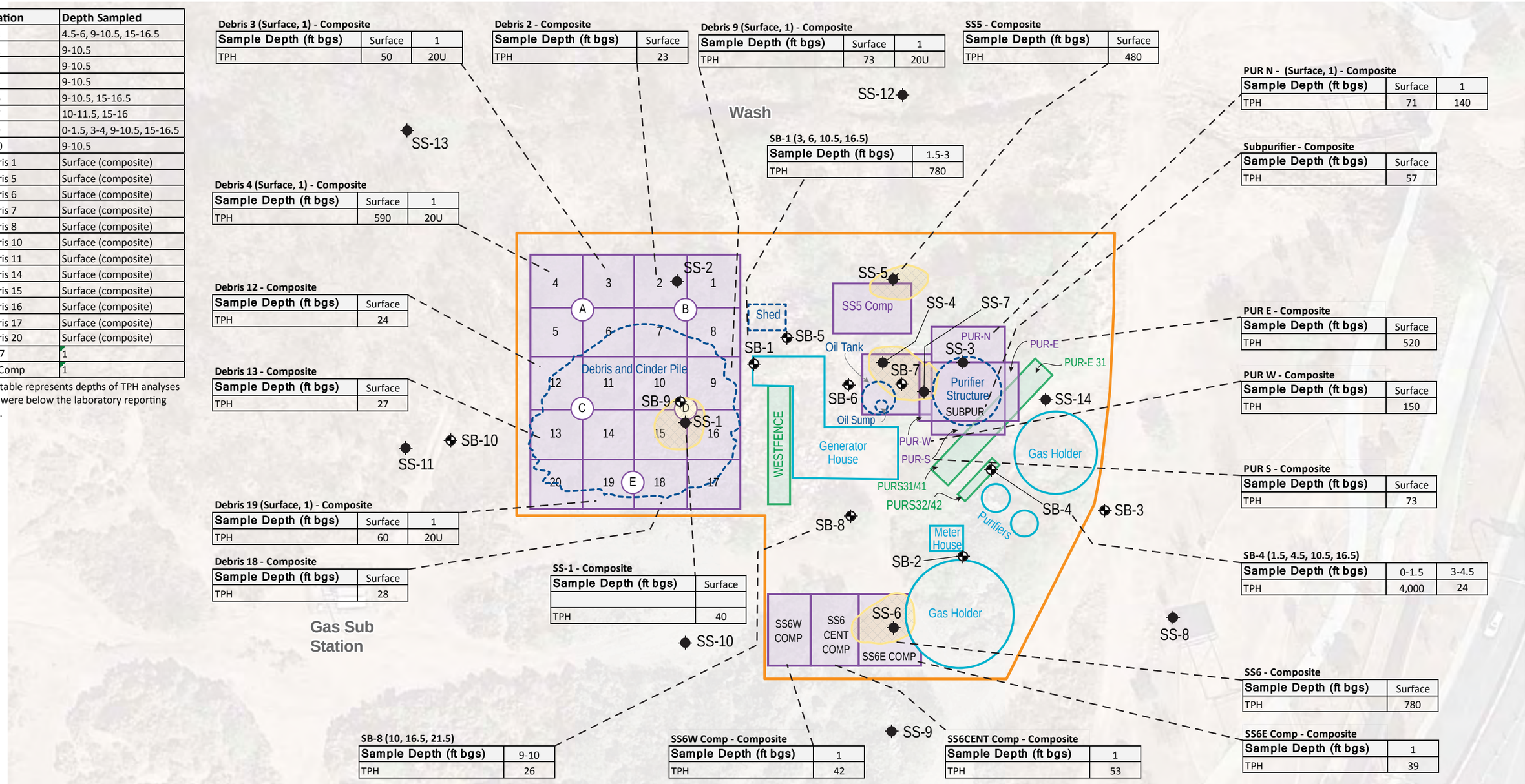
Sample Depth (ft bgs)	1
TPH	42

SS6CENT Comp - Composite

Sample Depth (ft bgs)	1
TPH	53

SS6E Comp - Composite

Sample Depth (ft bgs)	1
TPH	39



LEGEND

- Site Extent
- Former MGP-related structures/features - existing pad/foundation remaining
- Former MGP-related structures/features - removed
- Composite Surface soil sampling conducted June, 1996.
- Phase I composite Surface soil sampling conducted August, 1996.
- Phase II composite subSurface soil sampling conducted November, 1996
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995

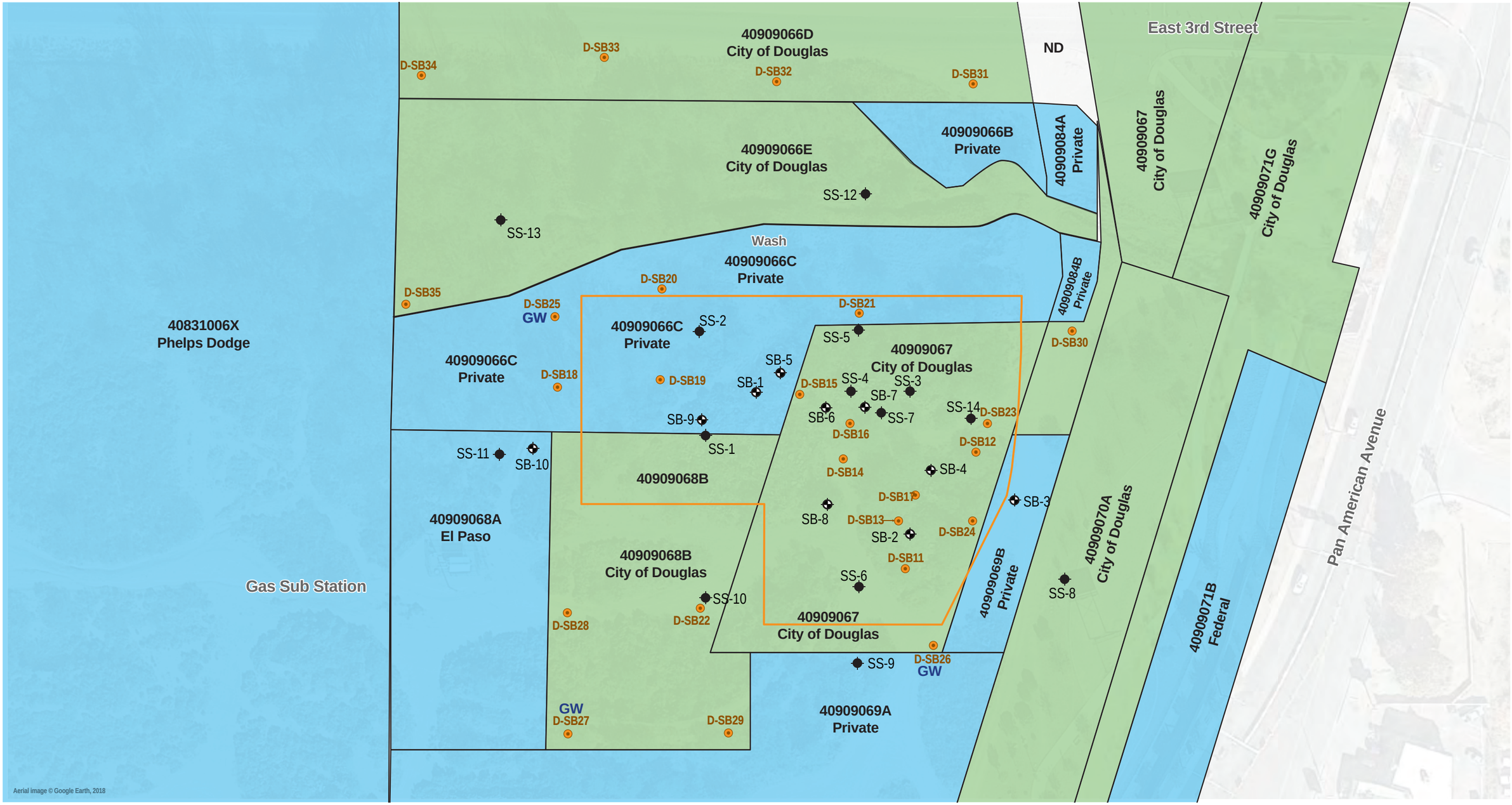
North

0 60 120

Approximate scale in feet

Figure 2-5. Total Petroleum Hydrocarbons in Soil
APS Former MGP Plant Site
Douglas, Arizona

JACOBS



LEGEND

- Site Extent
- Proposed Boring Location
- GW — Groundwater Evaluation Boring
- Surface Soil Sample Location, October 1995
- Soil Boring Sample Location, October 1995
- 40909067 — Parcel boundary and parcel number
- City of Douglas owned parcels
- Privately owned parcels
- ND = No Data

North

0 60 120

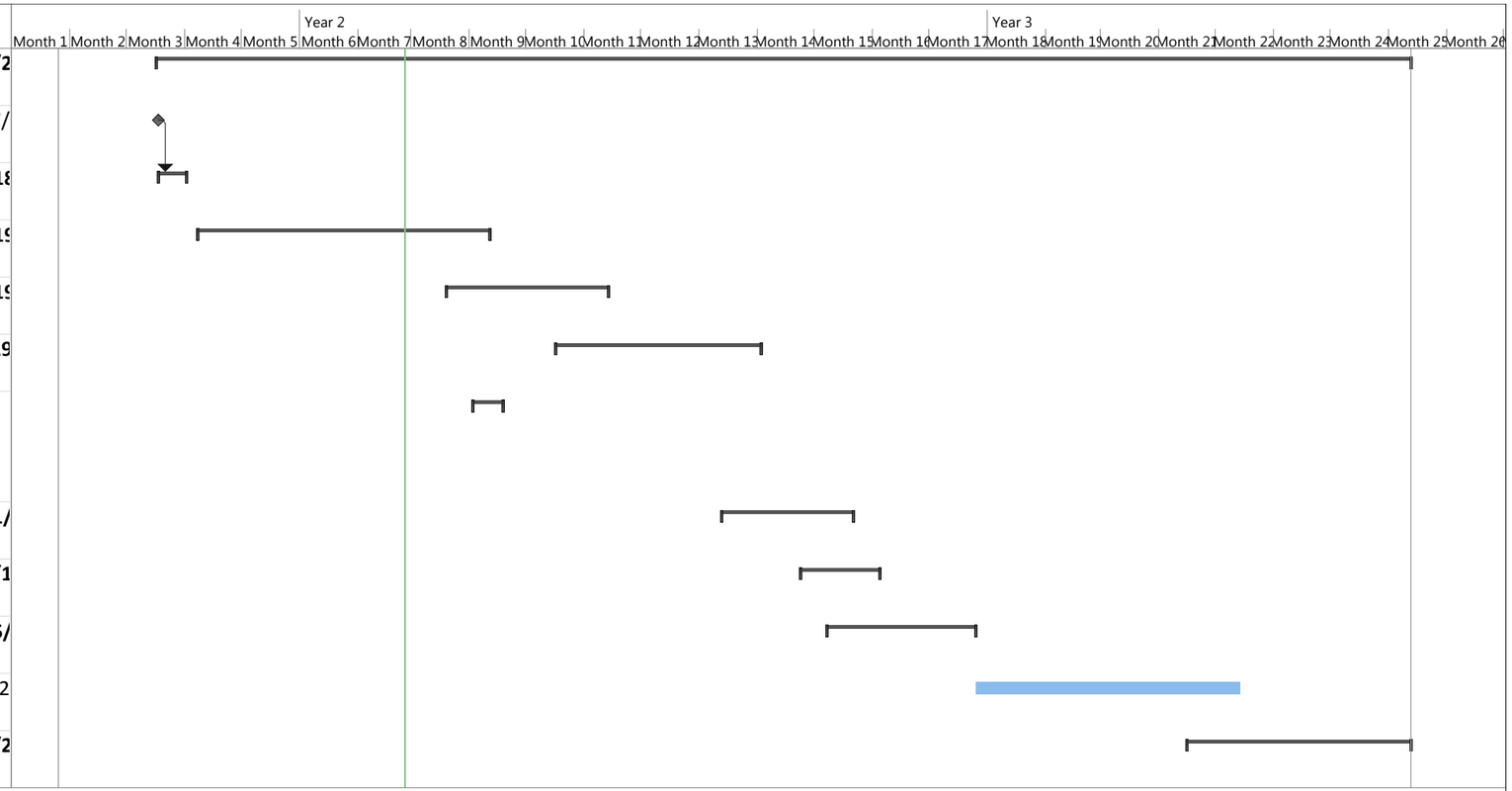
Approximate scale in feet

BI0508190846PHX Figure2-5_ProposedBoring_v1 (05/2019)

Figure 3-1. Proposed Boring Locations
APS Former MGP Plant Site
Douglas, Arizona

JACOBS

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Douglas MGP Site**	**476 days**	**Wed 10/17/**	**Wed 8/12/2**
2		**Project Award**	1 day	Wed 10/17/	Wed 10/17/
3		**Project Plans And Start Up**	**11 days**	**Thu 10/18/1**	**Thu 11/1/18**
6		**Data review And Site Characterization**	**111 days**	**Thu 11/8/18**	**Thu 4/11/19**
29		**Additional Site Investigition**	**62 days**	**Wed 3/20/1**	**Thu 6/13/19**
35		**Removal Action Plan (RAP)**	**77 days**	**Fri 5/17/19**	**Mon 9/2/19**
45		**Topographic Mapping and Utility Designation**	**12 days**	**Wed 4/3/19**	**Thu 4/18/19**
48		**Remediation Design**	**50 days**	**Tue 8/13/19**	**Mon 10/21/**
55		**Permitting Assistance**	**30 days**	**Tue 9/24/19**	**Mon 11/4/1**
58		**Contractor Procurement**	**57 days**	**Tue 10/8/19**	**Wed 12/25/**
64		**Removal Action**	20 wks	Thu 12/26/1	Wed 5/13/2
65		**Remediation Closure Report**	**85 days**	**Thu 4/16/2(**	**Wed 8/12/2**



Project: APS Douglas MGP 201
Date: Tue 2/26/19

Task	Project Summary	Manual Task	Start-only	Deadline	
Split	Inactive Task	Duration-only	Finish-only	Progress	
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress	
Summary	Inactive Summary	Manual Summary	External Milestone		

Appendix A
Sanborn Maps and Aerial Photographs

APPENDIX A

SANBORN FIRE INSURANCE MAPS

SANBORN MAP LEGEND

CODING OF FIRE-RESISTIVE STRUCTURAL UNITS FOR FIREPROOF AND NON-COMBUSTIBLE BUILDINGS

FRAMING

CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame.
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers.
C.	Protected Steel Frame.
D.	Individually Protected Steel Joists, Columns, Beams, Trusses, Arches.
E.	Indirectly Protected Steel Frame.
F.	Indirectly Protected Steel Joists, Columns, Beams, Trusses, Arches.
G.	Unprotected Steel Frame.
H.	Unprotected Steel Joists, Columns, Beams, Trusses, Arches.
O.	Masonry Bearing Walls only.

FLOORS

CODE	STRUCTURAL UNIT
1.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Pre-cast Concrete or Gypsum Slabs or Planks.
2.	Concrete on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, or Cellular, Ribbed or Corrugated Steel Units.
3.	Open Steel Deck or Grating.

ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Reinforced Gypsum Concrete. Pre-cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, or Cellular, Ribbed or Corrugated Steel Units.
c.	Incombustible Composition Boards with or without Insulation. Masonry or Metal Tiles.
d.	Steel Deck, Corrugated Metal or Asbestos Protected Metal with or without Insulation.

The coding to left, for framing, floor and roof structural units is used in describing the construction of fire-resistive buildings. In addition, reports for fire-resistive buildings will show the date built, wall construction other than brick, and ceilings.

Symbol	Description
FP - 1962 (CONC.) A-1-a	A fireproof building built in 1962 with concrete walls and reinforced concrete frame, floors and roof.
FPX - 1962 (METAL PANELS) B-2-a (NONCOMB. CEILGS.)	A fireproof building built in 1962 with metal panel walls, reinforced concrete columns and beams, concrete floors on metal lath and gypsum slab roof; non-combustible ceilings.
NC - 1962 (C. B.) H-2-d	A noncombustible building built in 1962 with concrete block walls; unprotected steel columns, beams and joists; concrete floors on metal lath and steel deck roof.

MASONRY CONSTRUCTION

Important interior and all exterior masonry walls of all non-residential buildings and residential buildings of five or more dwelling units are shown with weighted (——) lines.

Masonry walls of residential buildings of four dwelling units or less are shown with a standard line and the construction is noted on all buildings diagramed after July, 1963.

WALLS

- 8" Brick
- 12" Concrete
- 18" & 20" Stone
- 12" & 8" Hollow Tile Wall Thicknesses Placed Relative to Respective Floors
- Cinder, Concrete or Cement Brick
- Hollow Cinder or Concrete Blocks, Plastered
- Mixed Construction of Concrete Blocks, Brick Faced
- Mixed Construction of Concrete Blocks & Brick
- Masonry Walls, Metal Faced
- Adobe
- Hollow Cinder or Concrete Block Interior Wall Basement to Roof
- Tile Interior Wall Basement to Roof
- Cement Brick End Wall

PARTITIONS

- Frame
- Tile from Foundation to Top Ceiling only
- Concrete 1st Floor only
- Hollow Cinder or Concrete Block 1st Floor only
- Brick 2nd Floor only
- Tile 1st & 3rd Floors only

OPENINGS

(Interior)

- Wall with No Openings
- Wall with Double Standard Fire Doors 1st Floor
- Wall with Standard Fire Door Basement
- Wall with Substandard Fire Doors 1st & 3rd Floors
- Wall with Metal & Wired Glass Fire Doors all Floors
- Wall with Substandard Fire Doors 1st, 2nd & 3rd Floors & Unprotected Opening 4th Floor
- Wall with Small Unprotected Openings only
- Wall with Unprotected Openings all Floors

(Exterior)

- 1st Floor
- 1st & 2nd Floors
- 3rd Floor
- 1st & 4th Fl. with Metal Shutter 1st.
- 10th & 22nd only
- 10th to 22nd Fl.
- Glass Block
- Wired Glass in Metal Sash 2nd & 3rd Fl.

NON-MASONRY CONSTRUCTION

Non-masonry walls are shown with fine (———) lines.
(Wall construction other than wood and stucco on wood frame is noted)

- Wood & Stucco & Cement Plaster, Etc. on Wood Frame
- Brick Veneered on Wood Frame (Other Types of Veneered on Wood Frame Specifically Noted)
- Mixed Masonry & Non-Masonry (Type of Masonry Specifically Noted)
- Wood, Brick Lined, Br. Filled or Brick Nogged
- Wood Sash & Glass
- Metal Sash & Glass
- Metal Clad on Wood Frame
- Iron Building
- Iron Building with Wood Roof. (Location of Extensive Wood Areas Specifically noted)
- Asbestos Clad on Wood Frame, Noted in Non-Residential Structures only.
- Mixed Wall--0' of CB with Metal Sash Above
- Metal Panels
- Apron Walls With Wood Sash and Glass
- Stucco, Cement Plaster, Etc. on Steel Frame
- Asphalt and/or Asbestos Protected Metal on Steel Frame
- Asphalt and/or Asbestos Protected Metal on Wood Frame
- Glass Panels

GLOSSARY

A - B LINES An arbitrary boundary between adjoining sheets.
A. Private garage.
ABV. Above.
A.F.A. Equipped with fire detecting devices which automatically signal a central fire department.
AIR COND. Air cooling system employing ducts through floors.
APRON WALL. A masonry wall extending 5' or less above foundation.
ASSOC. RISK Risk not underwritten by Stock Fire Ins. Companies.
BASEMENT A story having its floor below ground & its ceiling at least 4' above ground.
Cook County, Ill.: A floor of a building next below the first floor. Shown by the symbol B following story height. Sub-basements or sub-cellars, (stories below the 1st basement), are shown by the symbol SB following basement symbol.
CHIMNEYS (Applicable to maps in Rocky Mountain & Pacific Coast States)
BC. Brick, stone, concrete brick & concrete chimneys.
C.BL.C. Concrete block chimney.
C.C. Non-standard concrete chimney.
T.C. Tile chimney.
P.C. Patent chimney.
IR. CH. Iron chimneys.
S.P. Stove pipe.
S.P.V. Stove pipe with patent ventilator.

RESIDENTIAL OCCUPANCY SYMBOLS
D. Single family unit or as qualified by a numeral.
F. - APTS. A multi-family residential building corresponding with local Rating Bureau definition in family units per floor, story height, & separation of entrance.
ROOM'G. A residential building normally occupied by a single family but with 10 or more rooms rented for lodging purposes.
EXCEPTIONS: 6 rooms in Arizona, California, Nevada, Utah & Montana; 5 rooms in Oregon & Washington; 4 rooms in Idaho & Hawaii.

FIRE RESISTIVE CONSTRUCTION SYMBOLS
F.P. Approved masonry walls, floors & roof, interior supports of approved masonry, concrete, and/or protected steel.
F.P.X. F. P. qualifications except interior or sub-standard walls.
N.C. Fire resistive with unprotected structural steel units.
HOLLOW WALL. A bonded masonry wall having a continuous air space within.
I.E.P. Independent Electric Plant.
IMPASSABLE Not traversable due to condition of terrain.
LEDGED WALL. A masonry bearing wall with extended ledges to support floors.
LOFT Tenanted by industrial occupancies.
M.L. & P. Concrete or plaster applied to metal lath on wood studdings.
M.S. & G. Metal sash & glass.
NOT OPEN Streets appearing on records but not open on ground.
O.L. Windows overlooking the roof above the corresponding floor of an adjoining building.
O.U. Open between ground and first floor.
PILAST'D. Masonry reinforcing columns in walls.
SKYTS. Skylights.
SL. CL. Slate attached to wood siding.
SM. HO. Smoke House.
STABLE Shown by crossing diagonal lines on diagram.
SUSP'D. Suspended ceilings below floor and/or roof beams.
SYST. System.
TRANSF. Transformer.
WD. Wood.

AT		P	
C		U	
W		T	

FIRE PROTECTION

- Fire Department Connection
- Automatic Sprinklers throughout contiguous sections of single risk (THRU-OUT)
- Automatic Sprinklers all floors of building
- Automatic Sprinklers in part of building only (Note under Symbol indicates protected portion of building) (1ST ONLY)
- Not Sprinklered
- Automatic Chemical Sprinklers
- Chemical Sprinklers in part of building only (Note under Symbol indicates protected portion of building)
- VP HYD. Vertical Pipe or Stand Pipe
- AFA Automatic Fire Alarm
- Water Tank
- Outside Vertical Pipe on fire escape
- Fire Alarm Box; Noted "HPFS" on High Pressure Fire Service
- Single Hydrant
- D.H. Double Hydrant
- T.H. Triple Hydrant
- Q.H. Quadruple Hydrant of the High Pressure Service
- Water Pipes of the High Pressure Service
- Water Pipes of the High Pressure Service as Shown on Key Map
- Public Water Service
- Private Water Service

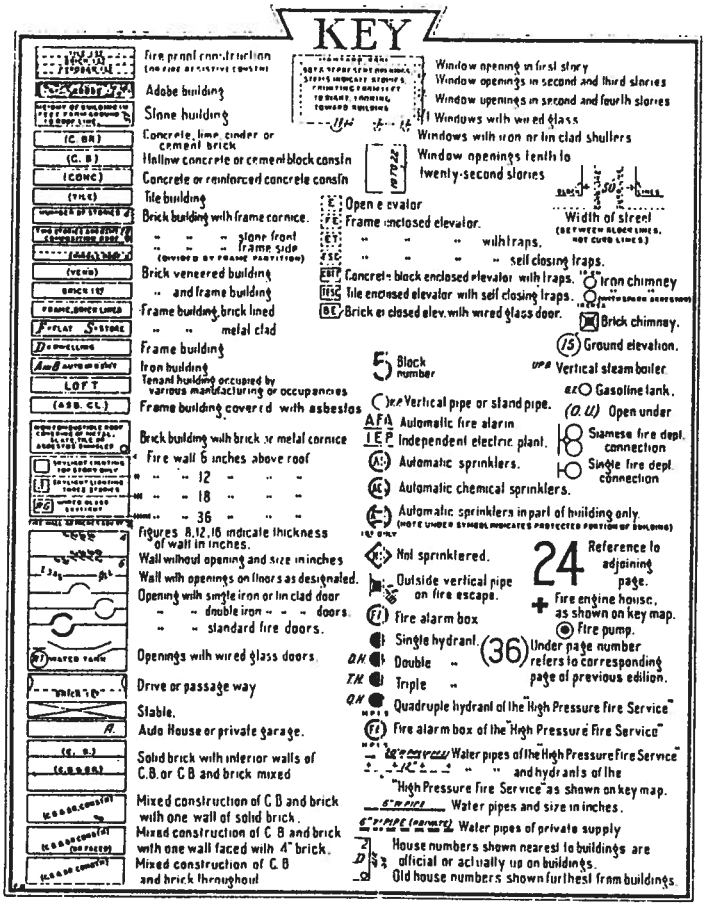
VERTICAL OPENINGS

- Skylight lighting top story only
- Skylight lighting 3 stories
- Skylight with Wired Glass in Metal Sash
- Open Elevator
- Frame Enclosed Elevator
- Frame Enclosed Elevator with Traps
- Frame Enclosed Elevator with Self Closing Traps
- Concrete Block Enclosed Elevator with Traps
- Tile Enclosed Elevator with Self Closing Traps
- Brick Enclosed Elevator with Wired Glass Door
- Open Hoist
- Hoist with Traps
- Open Hoist Basement to 1st
- Stairs

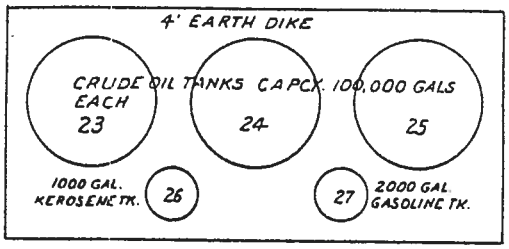
MISCELLANEOUS

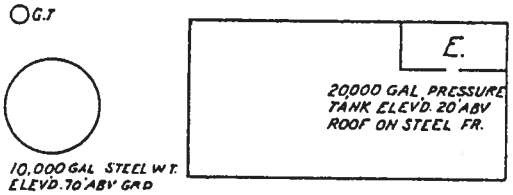
- Number of Stories; Height in Feet; Composition Roof Covering
- Parapet 6" above Roof; Frame Cornice; Parapet 12" above Roof
- Parapet 24" above Roof; Occupied by Warehouse; Metal, Slate, Tile or Asbestos Shingle Roof Covering; Parapet 48" above Roof
- 2 Stories & Basement; 1st Floor Occupied by Store; 2 Residential Units above 1st; Auto in Basement; Drive or Passageway; Wood Shingle Roof.
- IR.CH. Iron Chimney
- IR.CH.S.A. Iron Chimney (with Spark Arrestor)
- VPB Vertical Steam Boiler
- Horizontal Steam Boiler
- Brick Chimney
- G.T. Gasoline Tank
- Fire Pump
- Width of Street between Block Lines, not Curb Lines
- Ground Elevation
- House numbers nearest to Buildings are Official or Actually up on Buildings. Old House Numbers are Farthest from Buildings
- **24** Reference to Adjoining Page
- **5** Block Number
- Fire Department as shown on Key Map

Vac. or V. - Vacant
Vac. & Op. or V.-O. - Vacant & Open



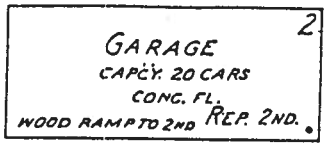
TANKS G.T. ○ Gasoline Tank

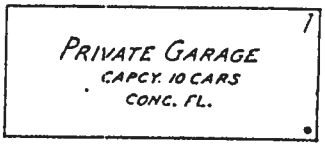




FUEL OIL LINE

○ Fire Cistern
CISTERN





CODING OF STRUCTURAL UNITS FOR FIREPROOF AND NON-COMBUSTIBLE BUILDINGS

FRAMING

CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame.
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers.
C.	Protected Steel Frame.
D.	Individually Protected Steel Joists, Columns, Beams, Trusses, Arches.
E.	Indirectly Protected Steel Frame.
F.	Indirectly Protected Steel Joists, Columns, Beams, Trusses, Arches.
G.	Unprotected Steel Frame.
H.	Unprotected Steel Joists, Columns, Beams, Trusses, Arches.
O.	Masonry Bearing Walls.

FLOORS

CODE	STRUCTURAL UNIT
1.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Pre-cast Concrete or Gypsum Slabs or Planks.
2.	Concrete on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
3.	Open Steel Deck or Grating.

LAND USE CODE APPLICABLE TO CHANGES DIAGRAMMED AFTER 5/60

R	RESIDENTIAL	M	MANUFACTURING
RT	RESIDENTIAL - TRANSIENT	P	PUBLIC OR INSTITUTIONAL
C	COMMERCIAL	U	UTILITY
W	WAREHOUSE	T	TRANSPORTATION

NUMERICAL PREFIX INDICATES THE NUMBER OF ESTABLISHMENTS IN EACH CATEGORY

ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Reinforced Gypsum Concrete. Pre-cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
c.	Incombustible Composition Boards with or without Insulation. Masonry or Metal Tiles.
d.	Steel Deck, Corrugated Metal or Asbestos Protected Metal with or without Insulation.

The coding for framing, floor and roof structural units as shown above is used in describing the construction of fire-resistive buildings. In addition, reports for fire-resistive buildings will show the date built and wall construction when other than brick.

F P buildings have masonry floors and roof; concrete and/or directly or indirectly protected steel framing; and clay brick, stone or poured concrete walls.

F P X buildings are F P buildings with inferior walls such as concrete block, cement brick, metal or glass panels, etc.

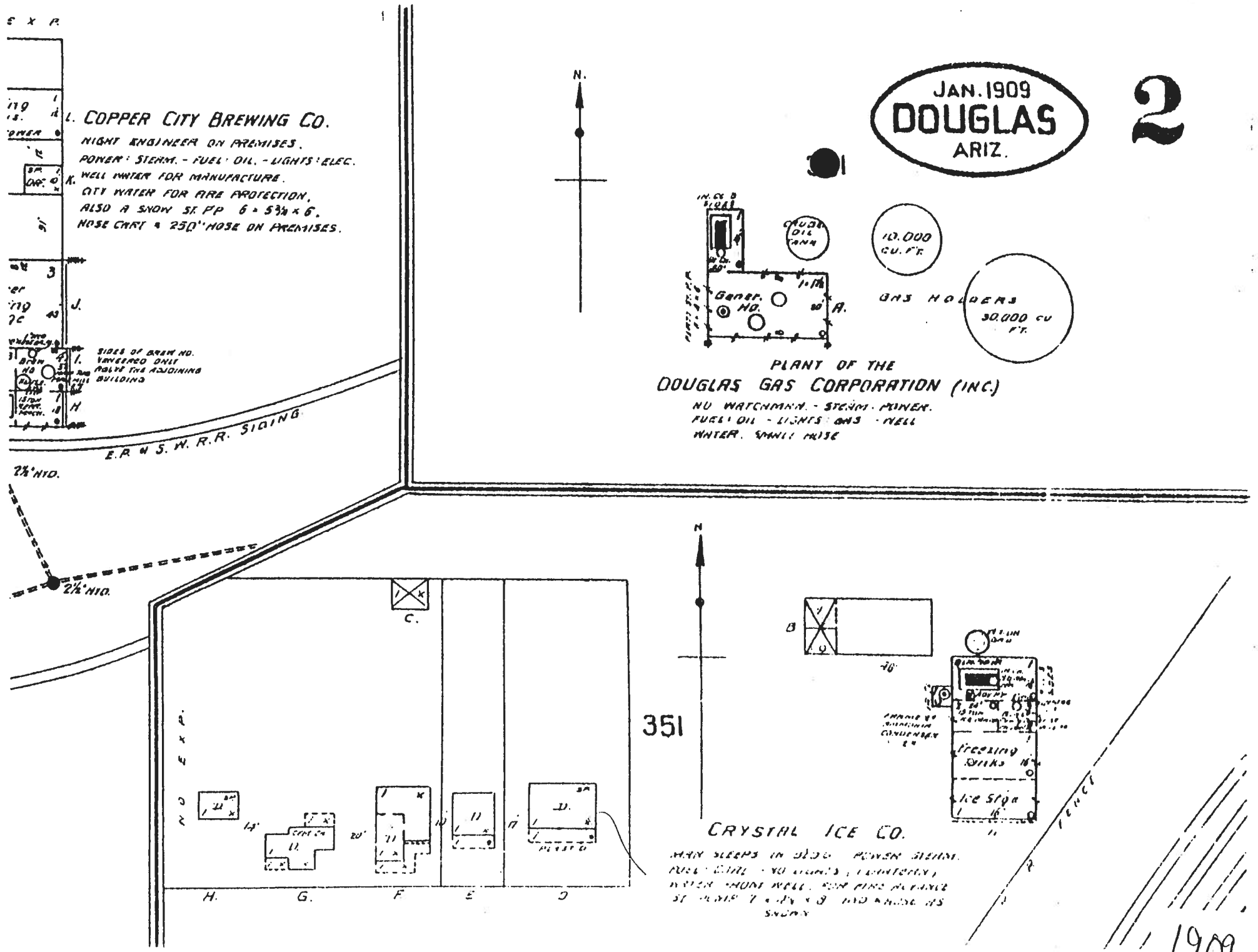
N C buildings have unprotected steel framing and fire-resistive but non-masonry floors and roof.

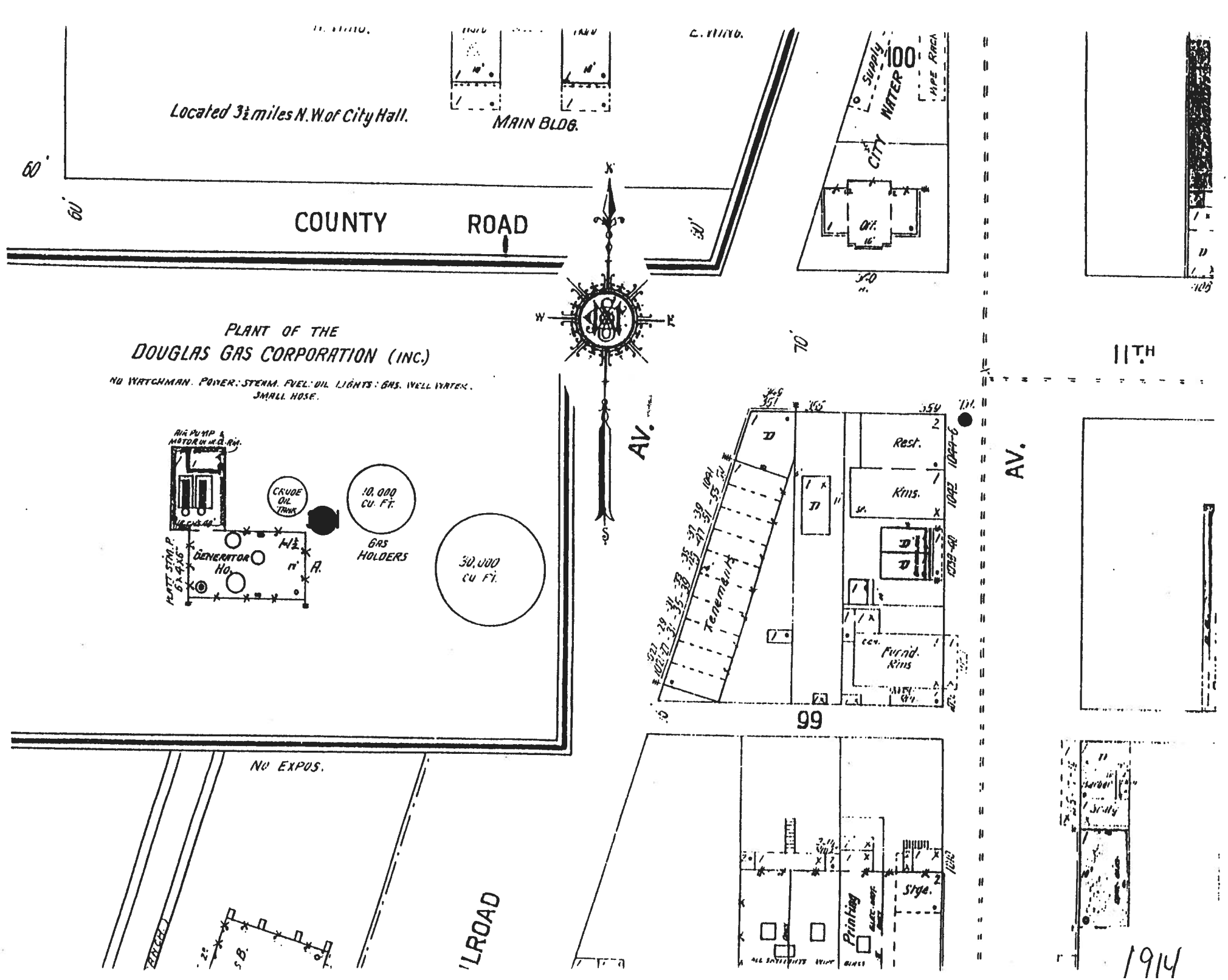
FP-1962 (CONC.) A-1-a — A fire-resistive building built in 1962 with concrete walls and reinforced concrete frame, floors and roof.

FPX-1962 (METAL PANELS) I E-2-b NONCOMB CEILS — A fire-resistive building built in 1962 with metal panel walls, indirectly protected steel frame, concrete floors and roof on metal lath, noncombustible ceilings.

NC-1962 "(C. B.)" H-2-d — A noncombustible building built in 1962 with concrete block walls; unprotected steel columns and beams; concrete floors on metal lath and steel deck roof.

5-62


JAN. 1909
DOUGLAS
ARIZ.
2
L. COPPER CITY BREWING CO.
NIGHT ENGINEER ON PREMISES.
POWER: STEAM. - FUEL: OIL. - LIGHTS: ELEC.
WELL WATER FOR MANUFACTURE.
CITY WATER FOR FIRE PROTECTION.
ALSO A SNOW ST. PP 6 x 5¾ x 6.
HOSE CART & 250' HOSE ON PREMISES.
SIDES OF BREW HO. VENEERED ONLY ABOVE THE ADJOINING BUILDING
E.P. & S.W. R.R. SIDING
2½" HYD.
2½" HYD.
N.
Gener. HO.
A.
10,000 CU. FT.
GAS HOLDERS
30,000 CU FT.
PLANT OF THE
DOUGLAS GAS CORPORATION (INC.)
NO WATCHMAN. - STEAM. POWER.
FUEL: OIL - LIGHTS: GAS - WELL
WATER. SMALL HOSE
C.
B
351
Freezing Tanks
Ice Stg.
CRYSTAL ICE CO.
H.
G.
F
E
D
1909



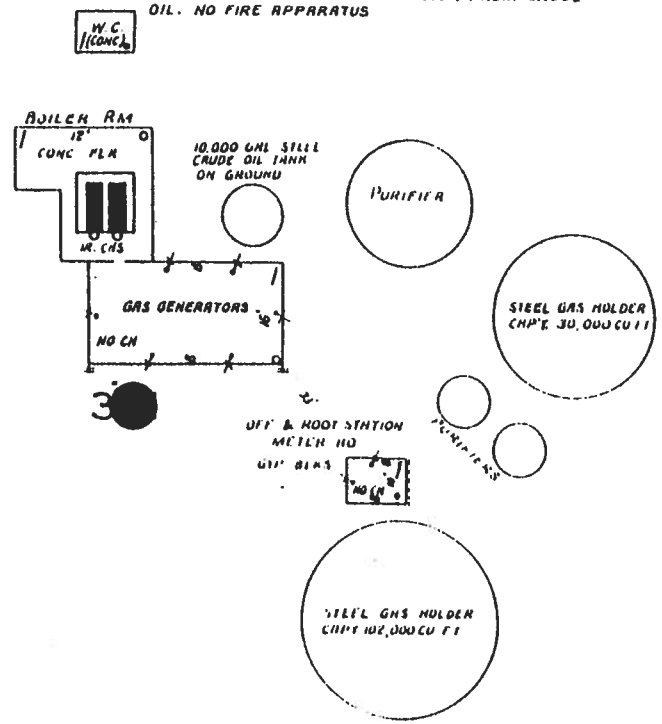
Located 3½ miles N.W. of City Hall.
MAIN BLDG.
COUNTY ROAD
PLANT OF THE
DOUGLAS GAS CORPORATION (INC.)
NO WATCHMAN. POWER: STEAM. FUEL: OIL LIGHTS: GAS. WELL WATER.
SMALL HOSE.
AIR PUMP & MOTOR IN M.O. RM.
CRUDE OIL TANK
10,000 CU. FT.
GAS HOLDERS
30,000 CU. FT.
GENERATOR HO.
PLATT STM. P. 6 x 4 x 6
NO EXPOS.
AV.
AV.
11TH
100
Supply
CITY WATER
Rest.
Rms.
Tenement
Furnd. Rms
99
Printing
Stge.
ILROAD
1914

THIS SECTION IS NOT
WITHIN CITY LIMITS

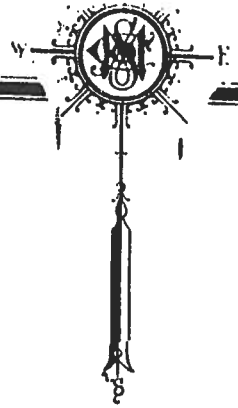
ARIZONA EDISON CO'S GAS WORKS

FOR LOCATION SEE KEY MAP

IN OPERATION DAY & NIGHT - POWER. STEAM - FUEL; OIL - LIGHTS; ELEC. GAS GENERATOR FROM CRUDE OIL. NO FIRE APPARATUS



1929

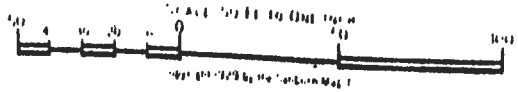


THIS SECTION IS NOT
WITHIN CITY LIMITS

Formerly ARIZONA EDISON Co's GAS WORKS
FOR LOCATION SEE KEY MAP
PLANT DISMANTLED & ALL BLDGS REMOVED

PURIFIER
VAC.

61



1947

Appendix B
Executive Summary of EDR Report

D3118600
Former Douglas Arizona Manufactured Gas Plant
Douglas, AZ 85607

Inquiry Number: 5485155.2s
November 14, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

FORMER DOUGLAS ARIZONA MANUFACTURED GAS PLANT
DOUGLAS, AZ 85607

COORDINATES

Latitude (North):	31.3357170 - 31˚ 20' 8.58''
Longitude (West):	109.5620580 - 109˚ 33' 43.40''
Universal Tranverse Mercator:	Zone 12
UTM X (Meters):	636800.9
UTM Y (Meters):	3467516.5
Elevation:	3946 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	6719529 DOUGLAS, AZ
Version Date:	2014

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20150621
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
FORMER DOUGLAS ARIZONA MANUFACTURED GAS PLANT
DOUGLAS, AZ 85607

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	DOUGLAS GAS CORPORAT	PAN AMERICAN AVE	EDR MGP	Lower	1 ft.
A2	USDHS USC&BP - DOUGL	5 N PAN AMERICAN AVE	UST	Higher	524, 0.099, SE
A3	DOUGLAS PORT OF ENTR	1 PAN AMERICAN AVE	VCP	Higher	532, 0.101, SE
B4	BORDER MART SHELL	100 E 3RD ST	UST, EMAP, Enforcement, Financial Assurance	Higher	586, 0.111, NE
B5	BORDER EXPRESS	305 N PAN AMERICAN A	LUST, UST, EMAP, Enforcement	Higher	659, 0.125, NE
B6	BORDER EXPRESS INC	305 N PAN AMERICAN A	EDR Hist Auto	Higher	659, 0.125, NE
7	DOUGLAS CHEVRON	461 N PAN AMERICAN A	UST, EMAP, Enforcement, Financial Assurance	Higher	982, 0.186, NE
8	WHITE KNIGHT HEALTHC	300 S 1ST ST	RCRA-CESQG, FINDS, ECHO	Higher	1029, 0.195, East
9	HAMLIN INC	230 INTERNATIONAL AV	RCRA NonGen / NLR, FINDS, ECHO	Higher	1057, 0.200, ESE
C10	WAL-MART SUPERCENTER	199 WEST 5TH STREET	AST	Lower	1295, 0.245, NW
C11	WALMART SUPERCENTER	199 W 5TH ST	RCRA-CESQG, EMAP, MANIFEST	Lower	1295, 0.245, NW
12	DOUGLAS, CITY OF - M	101 E 7TH ST	LUST, UST, EMAP	Higher	1502, 0.284, North
D13	TEXACO - BULK PLANT	7TH ST PAN AMERICAN	LUST, UST, EMAP	Higher	1714, 0.325, NNE
D14	PARK WEST PARTNERS W		AZURITE, AUL, EMAP	Higher	1983, 0.376, NNE
15	PARK WEST PARTNERS E		AZURITE, AUL, EMAP	Higher	2096, 0.397, NNE
16	SENOR BARRATO	560 N G AVE	LUST, UST, EMAP, Financial Assurance	Higher	2224, 0.421, NE
17	DOUGLAS DEVELOPMENT	SEC W. 9TH STREET &	VCP	Lower	2541, 0.481, NNW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

EXECUTIVE SUMMARY

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

AZ NPL ---------- NPL Detail Listing
AZ WQARF ---------- Water Quality Assurance Revolving Fund Sites

State- and tribal - equivalent CERCLIS

SPL ---------- Superfund Program List
SHWS ---------- ZipAcids List

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Directory of Solid Waste Facilities

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ---------- Brownfields Tracking System

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWTIRE ---------- Solid Waste Tire Facilities
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
CDL ---------- Clandestine Drug Labs

US CDL ..... National Clandestine Laboratory Register

Local Land Records

LIENS 2 ..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
SPILLS ..... Hazardous Material Logbook
SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ..... Formerly Used Defense Sites
DOD ..... Department of Defense Sites
SCRD DRYCLEANERS ..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ..... Financial Assurance Information
EPA WATCH LIST ..... EPA WATCH LIST
2020 COR ACTION ..... 2020 Corrective Action Program List
TSCA ..... Toxic Substances Control Act
TRIS ..... Toxic Chemical Release Inventory System
SSTS ..... Section 7 Tracking Systems
ROD ..... Records Of Decision
RMP ..... Risk Management Plans
RAATS ..... RCRA Administrative Action Tracking System
PRP ..... Potentially Responsible Parties
PADS ..... PCB Activity Database System
ICIS ..... Integrated Compliance Information System
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ..... Material Licensing Tracking System
COAL ASH DOE ..... Steam-Electric Plant Operation Data
COAL ASH EPA ..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ..... PCB Transformer Registration Database
RADINFO ..... Radiation Information Database
HIST FTTS ..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ..... Incident and Accident Data
CONSENT ..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV ..... Indian Reservations
FUSRAP ..... Formerly Utilized Sites Remedial Action Program
UMTRA ..... Uranium Mill Tailings Sites
LEAD SMELTERS ..... Lead Smelter Sites
US AIRS ..... Aerometric Information Retrieval System Facility Subsystem
US MINES ..... Mines Master Index File
ABANDONED MINES ..... Abandoned Mines
FINDS ..... Facility Index System/Facility Registry System
UXO ..... Unexploded Ordnance Sites
DOCKET HWC ..... Hazardous Waste Compliance Docket Listing
ECHO ..... Enforcement & Compliance History Information
FUELS PROGRAM ..... EPA Fuels Program Registered Listing
AIRS ..... Arizona Airs Database
Aquifer ..... Waste Water Treatment Facilities
AZ DOD ..... Department of Defense Sites
Dry Wells ..... Drywell Registration

DRYCLEANERS Drycleaner Facility Listing
EMAP All Places of Interest Listing
Enforcement Enforcement and Violation Listing
Financial Assurance Financial Assurance Information Listing
VAPOR Vapor Intrusion
UIC Underground Injection Control Wells
SPDES NPDES
WWFAC Waste Water Treatment Facilities

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Cleaner EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS Recovered Government Archive State Hazardous Waste Facilities List
RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 03/01/2018 has revealed that there are 2 RCRA-CESQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WHITE KNIGHT HEALTHC	***300 S 1ST ST***	***E 1/8 - 1/4 (0.195 mi.)***	***8***	***15***

EPA ID:: AZD982344350

Lower Elevation	Address	Direction / Distance	Map ID	Page
WALMART SUPERCENTER EPA ID:: AZR000047662	***199 W 5TH ST***	***NW 1/8 - 1/4 (0.245 mi.)***	***C11***	***19***

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Quality's LUST File Listing by Zip Code.

A review of the LUST list, as provided by EDR, and dated 09/07/2018 has revealed that there are 4 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORDER EXPRESS Date Closed: 01/02/13 Facility Id: 0-009658 Facility Status: CLOSED	***305 N PAN AMERICAN A***	***NE 0 - 1/8 (0.125 mi.)***	***B5***	***11***
DOUGLAS, CITY OF - M Date Closed: 02/20/96 Facility Id: 0-006774 Facility Status: CLOSED	***101 E 7TH ST***	***N 1/4 - 1/2 (0.284 mi.)***	***12***	***41***
TEXACO - BULK PLANT Date Closed: 08/18/98 Facility Id: 0-004251 Facility Status: CLOSED	***7TH ST PAN AMERICAN***	***NNE 1/4 - 1/2 (0.325 mi.)***	***D13***	***43***
SENOR BARRATO Facility Id: 0-006668 Facility Status: Confirmed	***560 N G AVE***	***NE 1/4 - 1/2 (0.421 mi.)***	***16***	***45***

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Quality's Arizona UST-DMS Facility and Tank Data Listing by City database.

A review of the UST list, as provided by EDR, and dated 09/07/2018 has revealed that there are 4 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
USDHS USC&BP - DOUGL Closure Type: Removal Facility Id: 0-006810 Date Closed: 12/06/1990	5 N PAN AMERICAN AVE	SE 0 - 1/8 (0.099 mi.)	A2	8
BORDER MART SHELL	***100 E 3RD ST***	***NE 0 - 1/8 (0.111 mi.)***	***B4***	***9***

Facility Id: 0-009318

BORDER EXPRESS	***305 N PAN AMERICAN A***	***NE 0 - 1/8 (0.125 mi.)***	***B5***	***11***
Closure Type: Removal Facility Id: 0-009658 Date Closed: 08/30/2012				
DOUGLAS CHEVRON	***461 N PAN AMERICAN A***	***NE 1/8 - 1/4 (0.186 mi.)***	***7***	***13***
Facility Id: 0-010052				

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the Department of Environmental Quality's Arizona UST-DMS Facility and Tank Data Listing by City database.

A review of the AST list, as provided by EDR, has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WAL-MART SUPERCENTER	199 WEST 5TH STREET	NW 1/8 - 1/4 (0.245 mi.)	C10	19
Database: AST, Date of Government Version: 08/15/2018 Facility Status: Permitted				

State and tribal institutional control / engineering control registries

AZURITE: ADEQ maintains a repository listing sites remediated under programs administered by the department.

A review of the AZURITE list, as provided by EDR, and dated 08/07/2018 has revealed that there are 2 AZURITE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PARK WEST PARTNERS W		***NNE 1/4 - 1/2 (0.376 mi.)***	***D14***	***44***
PARK WEST PARTNERS E		***NNE 1/4 - 1/2 (0.397 mi.)***	***15***	***45***

AUL: DEUR and VEMUR sites. DEUR: Declaration of Environmental Use Restriction. A restrictive land use covenant that is required when a property owner elects to use an institutional (i.e., administrative) control or engineering (i.e., physical) control as a means to meet remediation goals. The DEUR runs with and burdens the land, and requires maintenance of any institutional or engineering controls. VEMUR: Voluntary Environmental Mitigation Use Restriction. A restrictive land use covenant that, prior to July 18, 2000,was required when a property owner elected to remediate the property to non-residential uses. Effective July 18, 2000, the DEUR replaced the VEMUR as a restrictive use covenant.

A review of the AUL list, as provided by EDR, and dated 08/07/2018 has revealed that there are 2 AUL sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PARK WEST PARTNERS W		***NNE 1/4 - 1/2 (0.376 mi.)***	***D14***	***44***
Remediation ID: 31409				
PARK WEST PARTNERS E		***NNE 1/4 - 1/2 (0.397 mi.)***	***15***	***45***
Remediation ID: 31404				

State and tribal voluntary cleanup sites

VCP: Sites involved in the Voluntary Remediation Program..

A review of the VCP list, as provided by EDR, and dated 05/14/2018 has revealed that there are 2 VCP sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DOUGLAS PORT OF ENTR Date Closed: 06/28/2002 Date Closed: 08/03/2007 Facility Status: Transferred to Site Assessment Program Facility Status: Closed	1 PAN AMERICAN AVE	SE 0 - 1/8 (0.101 mi.)	A3	8

Lower Elevation	Address	Direction / Distance	Map ID	Page
DOUGLAS DEVELOPMENT Date Closed: 09/04/2014 Facility Status: Closed	SEC W. 9TH STREET &	NNW 1/4 - 1/2 (0.481 mi.)	17	47

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HAMLIN INC EPA ID:: AZD982429086	***230 INTERNATIONAL AV***	***ESE 1/8 - 1/4 (0.200 mi.)***	***9***	***17***

MANIFEST: Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

A review of the MANIFEST list, as provided by EDR, and dated 12/31/2017 has revealed that there is 1 MANIFEST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WALMART SUPERCENTER EPA Id: AZR000047662	***199 W 5TH ST***	***NW 1/8 - 1/4 (0.245 mi.)***	***C11***	***19***

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

A review of the EDR MGP list, as provided by EDR, has revealed that there is 1 EDR MGP site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DOUGLAS GAS CORPORAT	PAN AMERICAN AVE	0 - 1/8 (0.000 mi.)	1	8

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORDER EXPRESS INC	305 N PAN AMERICAN A	NE 0 - 1/8 (0.125 mi.)	B6	13

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
DOUGLAS AIRFIELD	SHWS

Appendix C
Soil Boring Logs from Previous Investigations

KEY TO BORING LOG SYMBOLS

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	DESCRIPTIONS
COARSE GRAINED SOILS (>50% BY WEIGHT LARGER THAN #200 SIEVE)	GRAVELS MORE THAN 50% OF COARSE FRACTION IS LARGER THAN THE NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVEL WITH OVER 12% FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN 50% OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SAND WITH LITTLE OR NO FINES		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS
		SAND WITH OVER 12% FINES		SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
				SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS (>50% SMALLER THAN #200 SIEVE SIZE).	SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50)			ML	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY, SANDY OR SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50)			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HARD PAN SOILS				HP	CALICHE AND OTHER IMPERVIOUS LAYERS

Stabilized water level (date)

Water level encountered during drilling

PID Photo-ionization Detector

FID Flame-ionization Detector

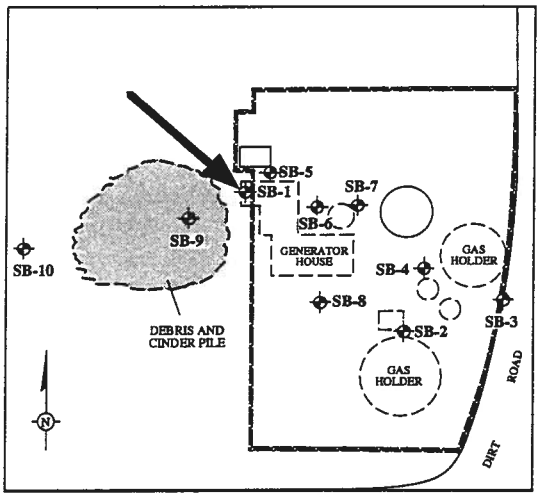
EXP Gastech Explosimeter

	Asphaltic Concrete
	Portland Cement Concrete
	Cement Grout

Soil sample depth interval (blackened interval indicates portion of sample prepared for laboratory chemical analysis.)

DEGREE OF VERTICAL refers to the angle at which the boring is drilled with respect to a plumb line.

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company



SOIL BORING SB-1

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 16.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB1-0-1.5	NA	5-7-7	1		OL ML	Dry, powdery lampblack from 0 to 6". Brown, silt to fine sand with minor clay, moderately cemented, slightly moist, no odor.
40	SB1-1.5-3	780	3-5-9	2		OL SM	Lampblack from 1.5 to 2'. From 2-3' brown to light brown, silt and sand with caliche nodules, dry, no odor.
NA	SB1-3-4.5	NA	9-50/6	3 4		SM	Brown to light brown, silty sand with minor clay, block fragments, and caliche nodules, dry no odor.
NA	SB1-4.5-6	<20	20-50/6	5		SM	Same as above.
NA	SB1-6-7.5	NA	14-20-25	6 7		SM	Brown to light rust, silty sand with some caliche veins and nodules, poorly cemented, dry, no odor.
NA	SB1-7.5-9	NA	24-50/6	8		SM	Same as above.
NA	SB1-9-10.5	NA	18-50/6	9 10		SM/ ML	Brown, silty sand with clay, dense, moderately well cemented. Black organic matter, specks, slightly moist, no odor.
NA		NA		11 12 13 14 15		SM/ ML	Same as above.
NA	SB1-15-16.5	<20	25-36-50/6	16		ML	Light brown, sandy silt with abundant caliche, dry, no odor.
				17 18 19 20			TOTAL DEPTH = 16.5 FEET

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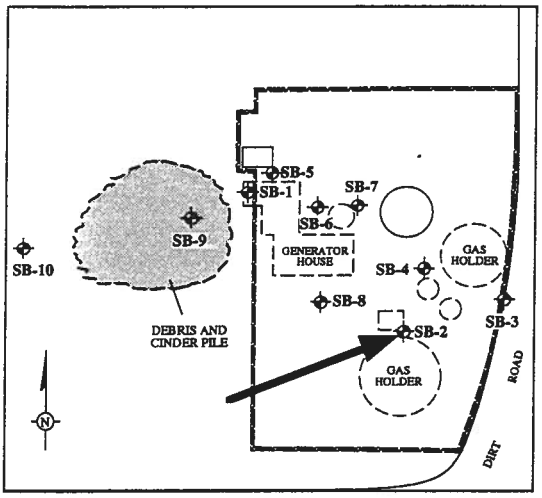

SOIL BORING SB-2

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 10.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB2-0-1.5	NA	2-4-5	1		ML	Brown to light brown, silt with organic matter, dried grass, etc., dry, no odor.
NA	SB2-1.5-3	NA	6-10-15	2		ML	Brown to light brown, silt with organic matter with white nodules (caliche), dry, no odor.
NA	SB2-3-4.5	NA	16-30-41	3		ML	Same as above but no organic matter, poorly cemented.
NA	SB2-4.5-6	NA	29-50/6	4		ML	Brown to light brown, clay, silt and sand, moderately cemented, dense, dry to slightly moist, no odor.
NA	SB2-6-7.5	NA	12-50/6	5		SM	Same as above but not as dense and drier, soil breaks into blocky fragments.
NA	SB2-7.5-9	NA	16-36-48	6		ML	Brown, dense silt with some clay and rock fragments, slightly moist, no odor.
NA	SB2-9-10.5	<20	22-24-24	7		ML	Caliche nodules present.
				8			TOTAL DEPTH = 10.5'
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

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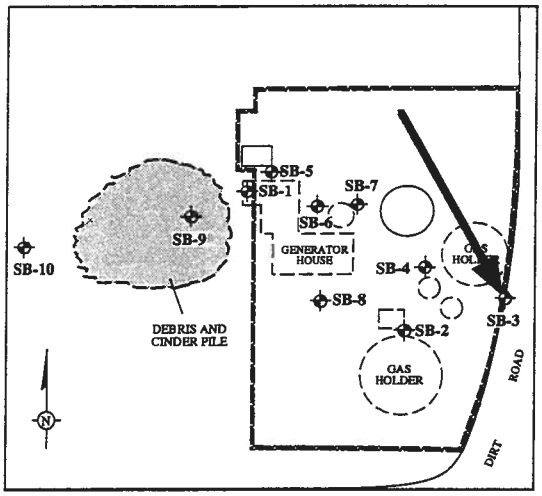
Environmental Services
A Heidemij Company



SOIL BORING SB-3

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 10.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB3-0-1.5	NA	15-13-15	1		SM	Brown-gray, silty sand, moderately compacted, dry, no odor.
NA	SB3-1.5-3	NA	7-15-19	2		ML	Brown to light brown, sandy silt with clay, moderately cemented with caliche veins and nodules, dry to slightly moist, no odor.
NA	SB3-3-4.5	NA	6-26-36	3 4		ML	Same as above but more caliche, poorly cemented, slightly moist.
NA	SB3-4.5-6	NA	23-23-27	5		SM/ ML	Brown, mottled with white veins and nodules, a well cemented layer at 5 feet with the rest poorly cemented silty sand, slightly moist, no odor.
NA	SB3-6-7.5	NA	12-24-24	6 7		SP	Rust brown, medium-coarse sand with very few fines, slightly moist, no odor.
NA	SB3-7.5-9	NA	8-20-25	8 9		ML	Dark brown, silty fine sand with clay, dense, moderately well cemented, black organic specks and lines, slightly moist, no odor.
NA	SB3-9-10.5	<20	12-13-18	10		ML	Same as above.
				11 12 13 14 15 16 17 18 19 20			TOTAL DEPTH = 10.5'

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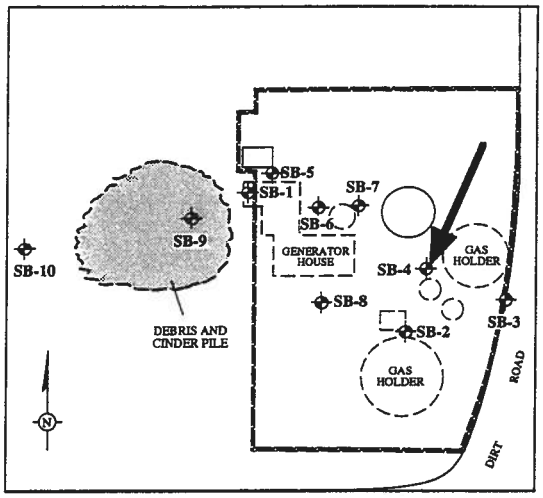

SOIL BORING SB-4

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 16.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
						OL	
NA	SB4-0-1.5	4000	17-27-26	1		SM	Dark brown-gray-black silt and sand, moderately cemented, dry, no odor.
NA	SB4-1.5-3	24	17-17-11	2		SM	Light brown-gray, silt and sand, powdery, very dry, no odor.
NA	SB4-3-4.5	NA		3		ML	Light brown clay, silt and sand with trace of gravel, poor to moderately caliche cemented, dry, no odor.
NA	SB4-4.5-6	NA	19-50/6	5		ML	Same as above with abundant white caliche or salt precipitates nodules.
NA	SB4-6-7.5	NA	9-24-36	6		ML	Same as above.
NA	SB4-7.5-9	NA	9-20-22	8		SP	Brown to slight rust colored, medium-coarse sand, some rocks, slightly moist, no dor.
NA	SB4-9-10.5	<20	6-14-12	9		ML/ CL	Brown, dense, clayey silt with black organic matter pieces, moist, no odor.
NA		NA		11		SM	Brown, mix of silt, sand, and clay, slightly moist, no odor.
NA	SB4-15-16.5	<20	20-50/6	15		SP	Brown to rust colored, similar to sample taken at 7.5 to 9 feet, well mixed soil, very sandy, clean, medium-coarse sand. Moist at 16.5 feet, no odor.
				17			TOTAL DEPTH = 16.5 FEET
				20			

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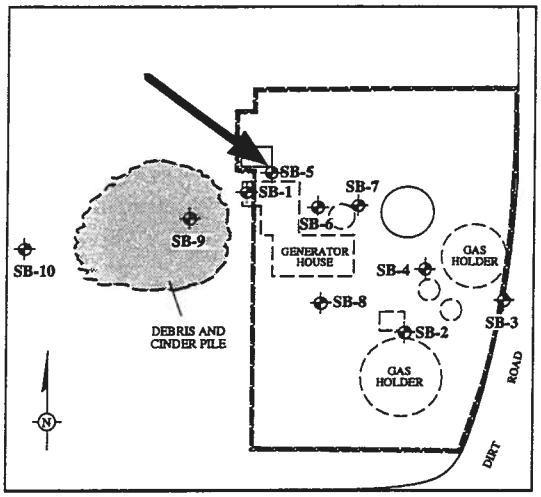

SOIL BORING SB-5

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 10.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB5-0-1.5	NA	6-6-6	1		SM	Light brown, silty sand, minor rocks and asphalt, dry, no odor.
NA	SB5-1.5-3	NA	9-15-15	2		SM	Same as above.
NA	SB5-3-4.5	NA	6-11-15	3		SM	Brown, silty fine sand with white veins, weakly cemented, dry, no odor.
NA	SB5-4.5-6	NA	18-25-26	5		SM	Same as above with more rocks 1/2 to 1 inch diameter.
NA	SB5-6-7.5	NA	9-24-27	7		SP	Brown to slightly rust colored, medium-coarse sand, dry to slightly moist, no odor.
NA	SB5-7.5-9	NA	10-27-30	8		ML	Brown, silt with fine sand and clay, slightly moist, no odor.
NA	SB5-9-10.5	<20	9-14-28	10		ML	Same as above with black organic matter specks.
				11			TOTAL DEPTH = 10.5'
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

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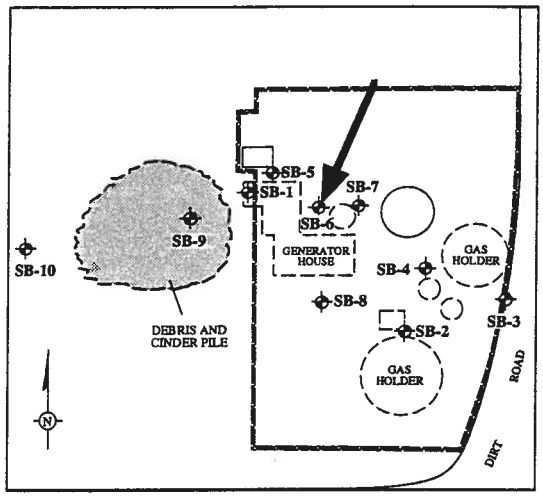

SOIL BORING SB-6

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 16.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB6-0-1.5	NA	7-5-6	1		SM	Brown, fine sand and silt, dry, no odor.
NA	SB6-1.5-3	NA	8-3-5	2		SM	Same as above, weak cementation, poorly compacted.
NA	SB6-3-4.5	NA	4-14-17	3		SM/ ML	Brown, sand and silt with some white caliche, poorly compacted, slightly moist, no odor.
NA	SB6-4.5-6	NA	6-4-14	4		ML/ SM	Brown, sandy silt with some clay, better cementation than above, slightly moist to moist, no odor.
NA	SB6-6-7.5	NA	11-12-16	5		SW	Brown, well graded sand with some silt, rock fragments, slightly moist, no odor.
NA	SB6-7.5-9	NA	7-7-7	6		ML	Brown silt.
NA	SB6-9-10.5	220		7		ML	Brown, fine sand with silt, poorly cemented, slightly moist to moist, no odor.
NA		NA		8		ML/ SC	Same as above, but with more clay.
NA	SB6-15-16.5	<20	16-50/6	9		ML/ CL	Light brown-gray silt and clay with well graded sand, slightly moist to moist, no odor.
				10			TOTAL DEPTH = 16.5 FEET
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

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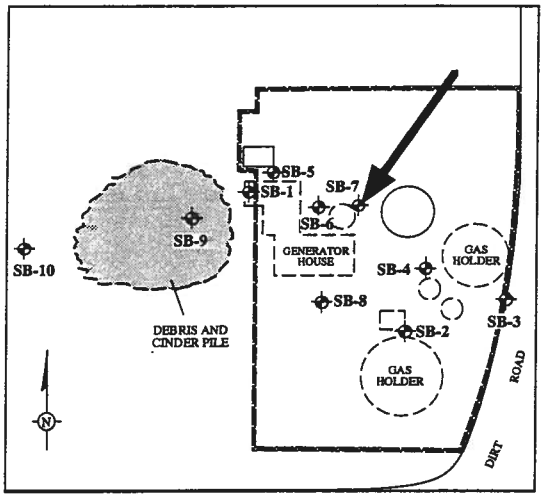

SOIL BORING SB-7

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 17	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB7-0-1.5	NA	7-10-10	1		SM	Brown-gray, silty fine sand, dry, but some moisture.
NA	SB7-1.5-3	NA	10-11-14	2		SM	Brown to light brown, silty fine sand with trace of gravel and pebbles, some weak caliche cementation, dry, no odor.
NA	SB7-3-4.5	NA	17-18-24	3		SM	Same as above.
NA	SB7-4.5-6	NA	18-50/6	4		SM	Same as above.
NA	SB7-6-7.5	NA	50/6	5		SW	Brown to slight rust color, well graded sand, dry to slightly moist, no odor.
				6			No recovery.
				7			No recovery.
NA	SB7-8.5-10	NA	100/6	8		ML	Brown, clayey silt with sand and minor gravels, well cemented, slightly moist, no odor.
NA	SB7-10-11.5	<20	18-50/6	9		ML	Same as above.
NA		NA		10		ML	Same as above.
				11			
				12			
				13			
				14			
				15			
NA	SB7-15-16.5	<20	30-50/6	16		ML/ CL	Brown to light brown, silty fine sand with strong caliche cementation, dry, no odor.
NA	SB7-16.5-17		14/100	17			
NA	SB7-17		100/6	18			TOTAL DEPTH = 17 FEET
				19			
				20			

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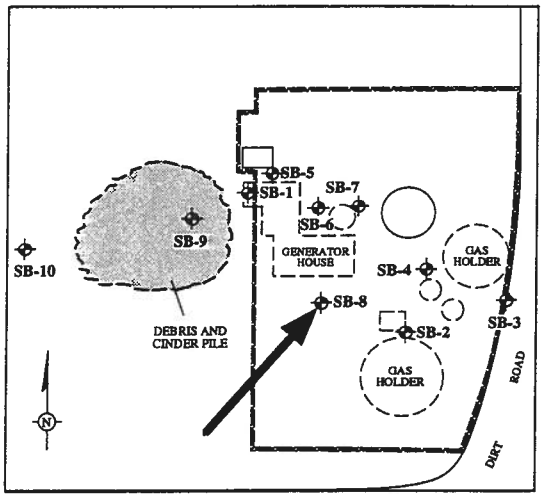

SOIL BORING SB-8

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 21.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB8-0-1.5	NA	11-14-13	1		SM/ ML	Light brown to gray brown, sandy silts, dry, no odor.
NA	SB8-1.5-3	NA	7-14-23	2		ML	Light brown, silts with some caliche, becoming darker brown to fine sands at top of spoon.
NA	SB8-3-4.5	NA	17-28-32	3		ML	Brown, sandy silt, abundant caliche colored cemented silt, dry, no odor.
NA	SB8-4.5-5.5	NA	24-50/6	4		ML	Brown, caliche cemented silt, dry, no odor.
NA	SB8-5.5-7	NA	23-50/6	5		ML	Brown, caliche cemented silt, dry to slightly moist, no odor.
NA	SB8-7-8.5	NA	16-50/6	6		ML/ SM	Brown to slightly rust colored, silt and fine sand with some clay, moderately well cemented, some pebbles and gravel, slightly moist.
NA	SB8-8.5-10	26	18/17/3	7		ML/ SM	Brown, same as above, continue drilling.
NA		NA		8		ML/ SM	Same as above.
NA	SB8-15.16.5	<20	50/6	9		SM	Same as above with more rocks. Less cemented than above.
NA	SB8-16.5-20	NA		10		SM	Brown, silty fine sand, less cemented, slightly moist, no odor.
NA	SB8-20-21.5	<20	19-50/6	11		SM/ SP	Brown, fine to medium sand, very minor silt, slightly moist to moist, no odor.
				12			TOTAL DEPTH = 21.5 FEET
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			

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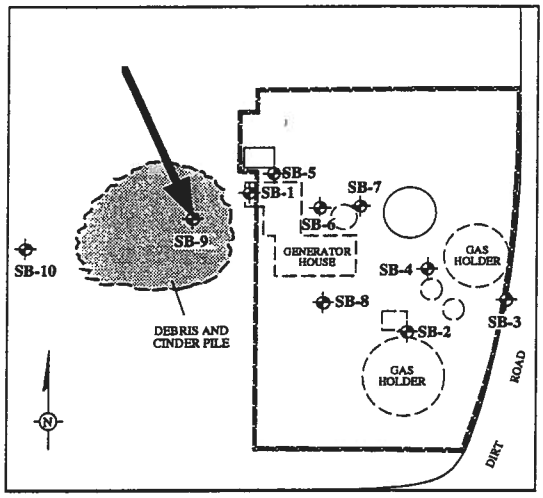

SOIL BORING SB-9

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM SUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 16.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB9-0-1.5	<400		OL	Lampblack, powdered silt, very dry, no odor.
100	SB9-1.5-3	NA	30-30-13	OL	Lampblack with chunks of rock, slightly moist, no odor. At 3 feet, gray, ash type soil, hard, well cemented.
NA	SB9-3-4.5	<20	3-5-6	ML	Brown, silty fine sand, poorly compacted, slightly moist, no odor.
NA	SB9-4.5-6	NA	5-10-20	ML/ SM	Light brown, silt, sand and clay with abundant caliche, poorly cemented, very dry, no odor.
NA	SB9-6-7.5	NA	19-40-42	ML/ SM	Same as above.
NA	SB9-7.5-9	NA	29-50/6	SW	Brown, silty well graded sand, poorly cemented, slightly moist, no odor.
NA	SB9-9-10.5	<20	15-19-29	SC/ ML	Brown to light brown, clayey silt with sand, moderately cemented with caliche nodules, some black organic specks, slightly moist, no odor.
NA		NA		ML	Same as above but with less clay.
NA	SB9-15-16.5	<20	31-50/6	ML/ CL	Brown, clayey silt, dense, black organic specks, slightly moist, no odor.
					TOTAL DEPTH = 16.5 FEET

DEPTH (feet): 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

GEOLOGIC LOG

GERAGHTY & MILLER, INC.
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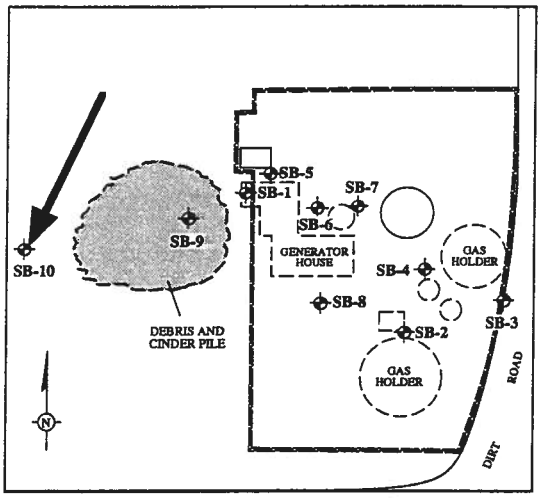

SOIL BORING SB-10

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 10.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB10-0-1.5	NA	4-6-7	1		SP/ SM	Brown, silt and well graded sands, abundant plant roots and organic matter, dry, no odor.
NA	SB10-1.5-3	NA	9-10-19	2		SM	From 1.5 to 2 feet, same as above. From 2 to 3 feet brown to light brown, silty sand with abundant caliche, dry, no odor.
NA	SB10-3-4.5	NA	12-22-27	3 4		SM	Same as above from 2 to 3 feet.
NA	SB10-4.5-6	NA	14-32-34	5		ML	Similar to above but with more clay, moderately cemented with some rocks, slightly moist.
NA	SB10-6-7.5	NA	12-21-23	6 7		SP SC/ ML	From 6 to 6.5 feet, brown, coarse to medium sand, dry, no odor. From 6.5 to 7.5 feet, brown, clay and silty sand, dense, moderately well cemented, slightly moist, no odor. Black organic specks.
NA	SB10-7.5-9	NA	14-20-24	8 9		SC/ ML	Same as above with very minor caliche.
NA	SB10-9-10.5	<20	12-21-22	10		SC/ ML	Same as above from 2 to 3 feet.
				11 12 13 14 15 16 17 18 19 20			TOTAL DEPTH = 10.5'

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

Appendix D
Soil Boring Logs

KEY TO BORING LOG SYMBOLS

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	DESCRIPTIONS
COARSE GRAINED SOILS (>50% BY WEIGHT LARGER THAN #200 SIEVE)	GRAVELS MORE THAN 50% OF COARSE FRACTION IS LARGER THAN THE NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVEL WITH OVER 12% FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN 50% OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SAND WITH LITTLE OR NO FINES		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS
		SAND WITH OVER 12% FINES		SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
				SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS (>50% SMALLER THAN #200 SIEVE SIZE).	SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50)			ML	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY, SANDY OR SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50)			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HARD PAN SOILS				HP	CALICHE AND OTHER IMPERVIOUS LAYERS

Stabilized water level (date)

Water level encountered during drilling

PID Photo-ionization Detector

FID Flame-ionization Detector

EXP Gastech Explosimeter

	Asphaltic Concrete
	Portland Cement Concrete
	Cement Grout

Soil sample depth interval (blackened interval indicates portion of sample prepared for laboratory chemical analysis.)

DEGREE OF VERTICAL refers to the angle at which the boring is drilled with respect to a plumb line.

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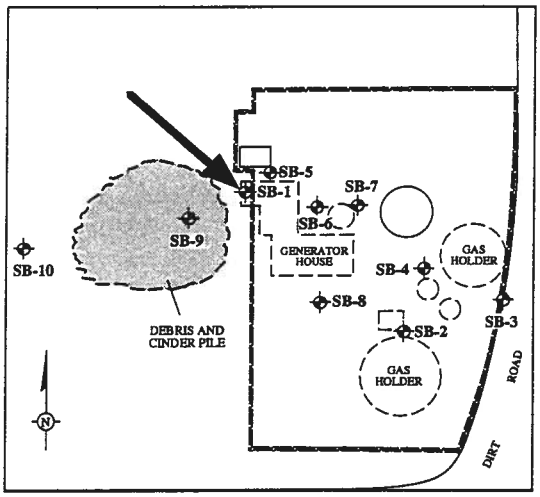

SOIL BORING SB-1

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 16.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB1-0-1.5	NA	5-7-7	1		OL ML	Dry, powdery lampblack from 0 to 6". Brown, silt to fine sand with minor clay, moderately cemented, slightly moist, no odor.
40	SB1-1.5-3	780	3-5-9	2		OL SM	Lampblack from 1.5 to 2'. From 2-3' brown to light brown, silt and sand with caliche nodules, dry, no odor.
NA	SB1-3-4.5	NA	9-50/6	3 4		SM	Brown to light brown, silty sand with minor clay, block fragments, and caliche nodules, dry no odor.
NA	SB1-4.5-6	<20	20-50/6	5		SM	Same as above.
NA	SB1-6-7.5	NA	14-20-25	6 7		SM	Brown to light rust, silty sand with some caliche veins and nodules, poorly cemented, dry, no odor.
NA	SB1-7.5-9	NA	24-50/6	8		SM	Same as above.
NA	SB1-9-10.5	NA	18-50/6	9 10		SM/ ML	Brown, silty sand with clay, dense, moderately well cemented. Black organic matter, specks, slightly moist, no odor.
NA		NA		11 12 13 14 15		SM/ ML	Same as above.
NA	SB1-15-16.5	<20	25-36-50/6	16		ML	Light brown, sandy silt with abundant caliche, dry, no odor.
				17 18 19 20			TOTAL DEPTH = 16.5 FEET

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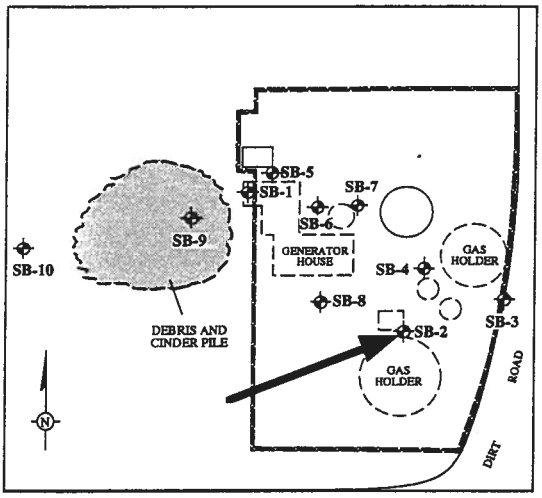

SOIL BORING SB-2

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 10.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB2-0-1.5	NA	2-4-5	1		ML	Brown to light brown, silt with organic matter, dried grass, etc., dry, no odor.
NA	SB2-1.5-3	NA	6-10-15	2		ML	Brown to light brown, silt with organic matter with white nodules (caliche), dry, no odor.
NA	SB2-3-4.5	NA	16-30-41	3		ML	Same as above but no organic matter, poorly cemented.
NA	SB2-4.5-6	NA	29-50/6	4		ML	Brown to light brown, clay, silt and sand, moderately cemented, dense, dry to slightly moist, no odor.
NA	SB2-6-7.5	NA	12-50/6	5		SM	Same as above but not as dense and drier, soil breaks into blocky fragments.
NA	SB2-7.5-9	NA	16-36-48	6		ML	Brown, dense silt with some clay and rock fragments, slightly moist, no odor.
NA	SB2-9-10.5	<20	22-24-24	7		ML	Caliche nodules present.
				8			TOTAL DEPTH = 10.5'
				9			
				10			
				11			
				12			
				13			
				14			
				15			
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				17			
				18			
				19			
				20			

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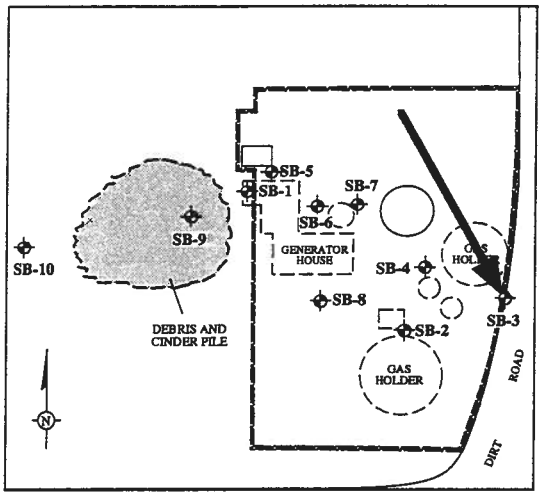

SOIL BORING SB-3

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 10.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB3-0-1.5	NA	15-13-15	1		SM	Brown-gray, silty sand, moderately compacted, dry, no odor.
NA	SB3-1.5-3	NA	7-15-19	2		ML	Brown to light brown, sandy silt with clay, moderately cemented with caliche veins and nodules, dry to slightly moist, no odor.
NA	SB3-3-4.5	NA	6-26-36	3 4		ML	Same as above but more caliche, poorly cemented, slightly moist.
NA	SB3-4.5-6	NA	23-23-27	5		SM/ ML	Brown, mottled with white veins and nodules, a well cemented layer at 5 feet with the rest poorly cemented silty sand, slightly moist, no odor.
NA	SB3-6-7.5	NA	12-24-24	6 7		SP	Rust brown, medium-coarse sand with very few fines, slightly moist, no odor.
NA	SB3-7.5-9	NA	8-20-25	8 9		ML	Dark brown, silty fine sand with clay, dense, moderately well cemented, black organic specks and lines, slightly moist, no odor.
NA	SB3-9-10.5	<20	12-13-18	10		ML	Same as above.
				11 12 13 14 15 16 17 18 19 20			TOTAL DEPTH = 10.5'

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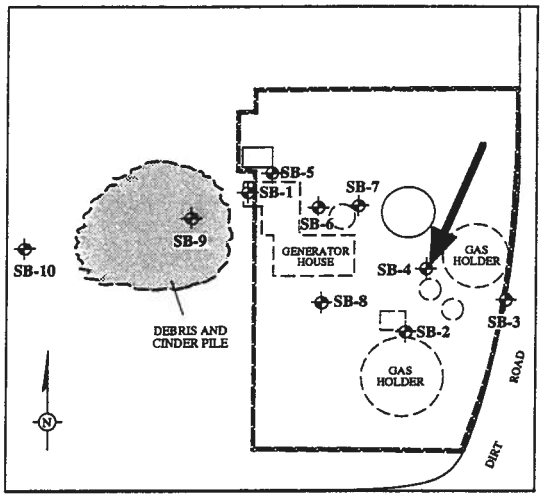

SOIL BORING SB-4

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 16.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
						OL	
NA	SB4-0-1.5	4000	17-27-26	1		SM	Dark brown-gray-black silt and sand, moderately cemented, dry, no odor.
NA	SB4-1.5-3	24	17-17-11	2		SM	Light brown-gray, silt and sand, powdery, very dry, no odor.
NA	SB4-3-4.5	NA		3		ML	Light brown clay, silt and sand with trace of gravel, poor to moderately caliche cemented, dry, no odor.
NA	SB4-4.5-6	NA	19-50/6	5		ML	Same as above with abundant white caliche or salt precipitates nodules.
NA	SB4-6-7.5	NA	9-24-36	6		ML	Same as above.
NA	SB4-7.5-9	NA	9-20-22	8		SP	Brown to slight rust colored, medium-coarse sand, some rocks, slightly moist, no dor.
NA	SB4-9-10.5	<20	6-14-12	9		ML/ CL	Brown, dense, clayey silt with black organic matter pieces, moist, no odor.
NA		NA		11		SM	Brown, mix of silt, sand, and clay, slightly moist, no odor.
NA	SB4-15-16.5	<20	20-50/6	15		SP	Brown to rust colored, similar to sample taken at 7.5 to 9 feet, well mixed soil, very sandy, clean, medium-coarse sand. Moist at 16.5 feet, no odor.
				17			TOTAL DEPTH = 16.5 FEET
				20			

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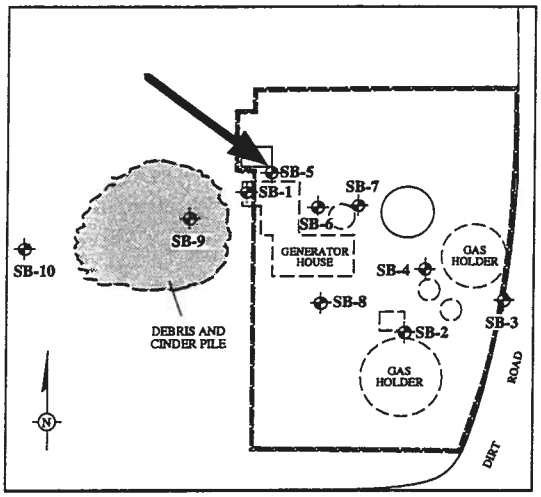

SOIL BORING SB-5

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 10.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB5-0-1.5	NA	6-6-6	1		SM	Light brown, silty sand, minor rocks and asphalt, dry, no odor.
NA	SB5-1.5-3	NA	9-15-15	2		SM	Same as above.
NA	SB5-3-4.5	NA	6-11-15	3		SM	Brown, silty fine sand with white veins, weakly cemented, dry, no odor.
NA	SB5-4.5-6	NA	18-25-26	5		SM	Same as above with more rocks 1/2 to 1 inch diameter.
NA	SB5-6-7.5	NA	9-24-27	7		SP	Brown to slightly rust colored, medium-coarse sand, dry to slightly moist, no odor.
NA	SB5-7.5-9	NA	10-27-30	8		ML	Brown, silt with fine sand and clay, slightly moist, no odor.
NA	SB5-9-10.5	<20	9-14-28	10		ML	Same as above with black organic matter specks.
				11			TOTAL DEPTH = 10.5'
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

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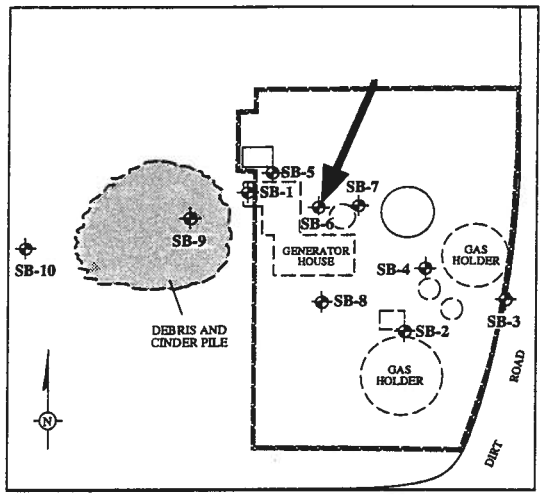

SOIL BORING SB-6

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 16.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB6-0-1.5	NA	7-5-6	1		SM	Brown, fine sand and silt, dry, no odor.
NA	SB6-1.5-3	NA	8-3-5	2		SM	Same as above, weak cementation, poorly compacted.
NA	SB6-3-4.5	NA	4-14-17	3		SM/ ML	Brown, sand and silt with some white caliche, poorly compacted, slightly moist, no odor.
NA	SB6-4.5-6	NA	6-4-14	4		ML/ SM	Brown, sandy silt with some clay, better cementation than above, slightly moist to moist, no odor.
NA	SB6-6-7.5	NA	11-12-16	5		SW	Brown, well graded sand with some silt, rock fragments, slightly moist, no odor.
NA	SB6-7.5-9	NA	7-7-7	6		ML	Brown silt.
NA	SB6-9-10.5	220		7		ML	Brown, fine sand with silt, poorly cemented, slightly moist to moist, no odor.
NA		NA		8		ML/ SC	Same as above, but with more clay.
NA	SB6-15-16.5	<20	16-50/6	9		ML/ CL	Light brown-gray silt and clay with well graded sand, slightly moist to moist, no odor.
				10			TOTAL DEPTH = 16.5 FEET
				11			
				12			
				13			
				14			
				15			
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				17			
				18			
				19			
				20			

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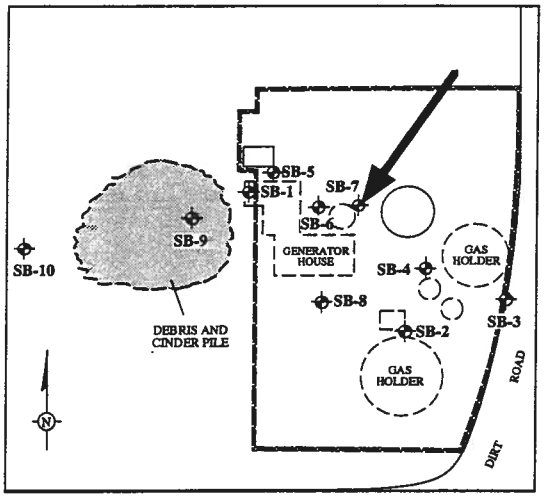

SOIL BORING SB-7

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 17	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB7-0-1.5	NA	7-10-10	1		SM	Brown-gray, silty fine sand, dry, but some moisture.
NA	SB7-1.5-3	NA	10-11-14	2		SM	Brown to light brown, silty fine sand with trace of gravel and pebbles, some weak caliche cementation, dry, no odor.
NA	SB7-3-4.5	NA	17-18-24	3		SM	Same as above.
NA	SB7-4.5-6	NA	18-50/6	4		SM	Same as above.
NA	SB7-6-7.5	NA	50/6	5		SW	Brown to slight rust color, well graded sand, dry to slightly moist, no odor.
				6			No recovery.
				7			No recovery.
NA	SB7-8.5-10	NA	100/6	8		ML	Brown, clayey silt with sand and minor gravels, well cemented, slightly moist, no odor.
NA	SB7-10-11.5	<20	18-50/6	9		ML	Same as above.
NA		NA		10		ML	Same as above.
				11			
				12			
				13			
				14			
				15			
NA	SB7-15-16.5	<20	30-50/6	16		ML/ CL	Brown to light brown, silty fine sand with strong caliche cementation, dry, no odor.
NA	SB7-16.5-17		14/100	17			
NA	SB7-17		100/6	18			TOTAL DEPTH = 17 FEET
				19			
				20			

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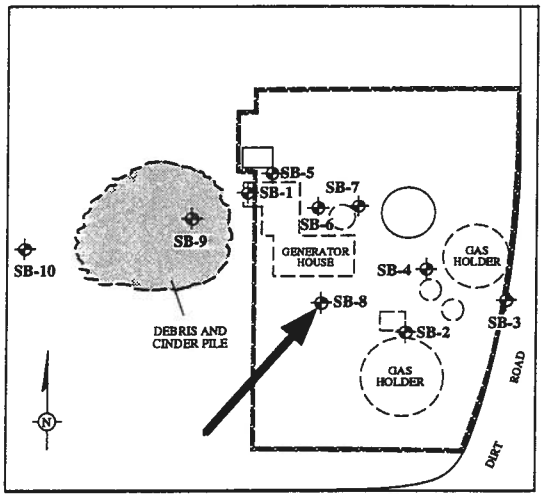

SOIL BORING SB-8

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/25/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 21.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB8-0-1.5	NA	11-14-13	1		SM/ ML	Light brown to gray brown, sandy silts, dry, no odor.
NA	SB8-1.5-3	NA	7-14-23	2		ML	Light brown, silts with some caliche, becoming darker brown to fine sands at top of spoon.
NA	SB8-3-4.5	NA	17-28-32	3		ML	Brown, sandy silt, abundant caliche colored cemented silt, dry, no odor.
NA	SB8-4.5-5.5	NA	24-50/6	4		ML	Brown, caliche cemented silt, dry, no odor.
NA	SB8-5.5-7	NA	23-50/6	5		ML	Brown, caliche cemented silt, dry to slightly moist, no odor.
NA	SB8-7-8.5	NA	16-50/6	6		ML/ SM	Brown to slightly rust colored, silt and fine sand with some clay, moderately well cemented, some pebbles and gravel, slightly moist.
NA	SB8-8.5-10	26	18/17/3	7		ML/ SM	Brown, same as above, continue drilling.
NA		NA		8		ML/ SM	Same as above.
NA	SB8-15.16.5	<20	50/6	9		SM	Same as above with more rocks. Less cemented than above.
NA	SB8-16.5-20	NA		10		SM	Brown, silty fine sand, less cemented, slightly moist, no odor.
NA	SB8-20-21.5	<20	19-50/6	11		SM/ SP	Brown, fine to medium sand, very minor silt, slightly moist to moist, no odor.
				12			TOTAL DEPTH = 21.5 FEET
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			

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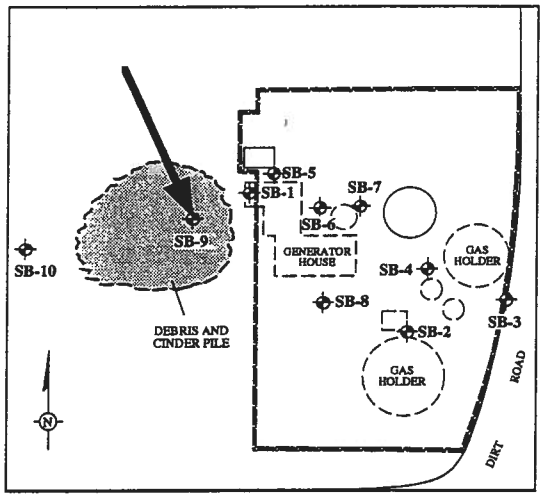


SOIL BORING SB-9

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM SUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 16.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

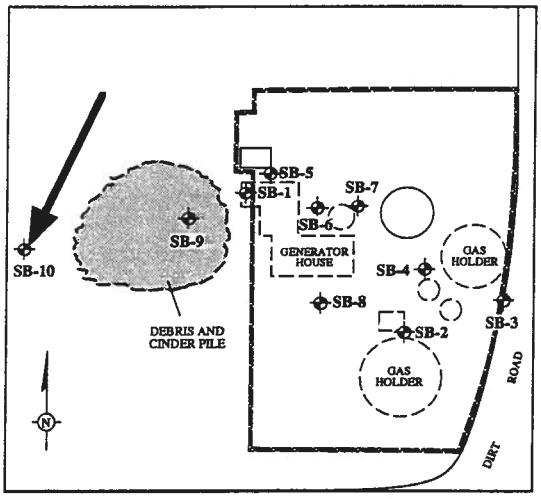
DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB9-0-1.5	<400		OL	Lampblack, powdered silt, very dry, no odor.
100	SB9-1.5-3	NA	30-30-13	OL	Lampblack with chunks of rock, slightly moist, no odor. At 3 feet, gray, ash type soil, hard, well cemented.
NA	SB9-3-4.5	<20	3-5-6	ML	Brown, silty fine sand, poorly compacted, slightly moist, no odor.
NA	SB9-4.5-6	NA	5-10-20	ML/ SM	Light brown, silt, sand and clay with abundant caliche, poorly cemented, very dry, no odor.
NA	SB9-6-7.5	NA	19-40-42	ML/ SM	Same as above.
NA	SB9-7.5-9	NA	29-50/6	SW	Brown, silty well graded sand, poorly cemented, slightly moist, no odor.
NA	SB9-9-10.5	<20	15-19-29	SC/ ML	Brown to light brown, clayey silt with sand, moderately cemented with caliche nodules, some black organic specks, slightly moist, no odor.
NA		NA		ML	Same as above but with less clay.
NA	SB9-15-16.5	<20	31-50/6	ML/ CL	Brown, clayey silt, dense, black organic specks, slightly moist, no odor.
					TOTAL DEPTH = 16.5 FEET

DEPTH (feet): 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

GEOLOGIC LOG

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company



SOIL BORING SB-10

THE FORMER DOUGLAS, ARIZONA MGP SITE

PROJECT NUMBER: AZ0519.002	LOGGED BY: EDWARD F. HAGAN
CHECKED BY: EDWARD F. HAGAN	
DRILLING CO: VERDE	
DRILLER: BRETT	HELPER: BENJAMIN
DATE DRILLED: 10/26/95	
DRILLING METHOD: HOLLOW STEM AUGER	
SAMPLING METHOD: SPLIT SPOON	
DEGREE OFF VERTICAL: 0	
HOLE DIAMETER (inch): 8	
TOTAL DEPTH (feet): 10.5	

WATER LEVEL ENCOUNTERED: NA

TIME: NA

DATE: NA

OVA (mg/kg)	SAMPLE ID	TPH (mg/kg)	BLOWS/6"	DEPTH (feet)	GEOLOGIC LOG	SOIL SYMBOL (U.S.C.S.)	SAMPLE/CUTTINGS DESCRIPTION
NA	SB10-0-1.5	NA	4-6-7	1		SP/ SM	Brown, silt and well graded sands, abundant plant roots and organic matter, dry, no odor.
NA	SB10-1.5-3	NA	9-10-19	2		SM	From 1.5 to 2 feet, same as above. From 2 to 3 feet brown to light brown, silty sand with abundant caliche, dry, no odor.
NA	SB10-3-4.5	NA	12-22-27	3 4		SM	Same as above from 2 to 3 feet.
NA	SB10-4.5-6	NA	14-32-34	5		ML	Similar to above but with more clay, moderately cemented with some rocks, slightly moist.
NA	SB10-6-7.5	NA	12-21-23	6 7		SP SC/ ML	From 6 to 6.5 feet, brown, coarse to medium sand, dry, no odor. From 6.5 to 7.5 feet, brown, clay and silty sand, dense, moderately well cemented, slightly moist, no odor. Black organic specks.
NA	SB10-7.5-9	NA	14-20-24	8 9		SC/ ML	Same as above with very minor caliche.
NA	SB10-9-10.5	<20	12-21-22	10		SC/ ML	Same as above from 2 to 3 feet.
				11 12 13 14 15 16 17 18 19 20			TOTAL DEPTH = 10.5'

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B11	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/30/2019	ELEVATION :	**N/A**
START TIME :	9:05	WATER LEVEL :	
END TIME :	10:20	LOGGER :	**A. Shwartz, I. Dinkleman**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
			N/A	Surface: Silty sand w/gravel. (SM) Gravel angular up to 1/2" ϕ. Sand well-graded. Dry. 10 yr/5/2. Grayish brown	Reacts with HCL
			6--7--13	1.0 - 1.5' : Silty sand (SM) Few gravel. Subangular. Sand well graded. Moist. 7.5 yr 4/4. Brown	Reacts with HCL Concrete slab @ 3.0 - 3.5'
			6 for 6"	2.5 - 3.0' : Silty sand with gravel (SM). Gravel angular - subangular, up to 2.0" ϕ. Sand is well graded. Moist.	Reacts with HCL
5				Interbedding of caliche. Hard calcareous layer. 7.5 yr 3/4 Dark brown	
			10-16-20	5.0 - 5.5' : Silty sand (SM). Trace gravel. Caliche layer ~ 25". Dry. Reacts strongly with HCL. White. 7.5 yr 5/3. Brown	Reacts with HCL
			50 for 6"	7.5 - 8.0' Silty sand (SM). Sand well-graded. Caliche layer ~ 2.5". Moist. 7.5 yr 4/4. Brown	Reacts with HCL
10			17-18-21	10-10.5' Same as above (7.5-8.') with few clay clasts.	
15			11--14--16	15.0-15.5'. Well graded sand with silt (SW-SM). Dry. Sand sub-angular - sub-rounded. Poorly cemented. Gravel up to 1/2" ϕ. Angular to sub-rounded. Few caliche 5 yr 4/6 Yellowish Red	Reacts with HCL
20			10--10--11	19.5 - 20'. Silty Sand (SM). Sand is well graded. Angular - sub angular. Moist. 5 yr 4/6 Yellowish Red	Reacts with HCL
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B12	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/31/2019	ELEVATION :	**N/A**
START TIME :	11:00	WATER LEVEL :	
END TIME :	12:15	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
			8--9--11	1.0-1.5 - Sandy silt (ML) Brown Damp, soft, trace clay. No plasticity	HS = 0.4 ppm
			5--7--12	2.5-3.0 - Clayey silt (CL) Brown mottled with white, brown silt and white kaolin clay lenses. Trace coarse gravel, silt is soft, clay is firm.	HS=0.2 ppm
5			10--14--15	5.0-5.5' Sandy silt (ML). Dark brown, some fine gravel and black tar substance. Trace clay, no plasticity.	HS=0.2 ppm Black tar/asphalt
			50 for 3"	7.5-8.0'. Same as above. Possible lamp black tar	HS= 0.7 ppm
10			30-50 for 6"	10-10.5'. Gravelly silt (GM) Brown, dry, well-graded.Trace clay	HS=0.3 ppm
15			12--13--16	15.0-15.5' - Sandy silt (ML) Dry, few gravel, trace clay, medium dense	HS=0.5 ppm
20			11--11--15	19.5-20.0' Gravelly sand (SW) Brown, dry, coarse sand. Some gravel, little silt, no plasticity, lense of possible lamp black.	HS= 0.3 ppm Lense of broken soil has visual line of lamp Took pic. Believe it could be slough from above as rest is clean.
25			4--8--9	24.5-25' Silty sand (ML) Yellowish brown, moist, trace gravel, soft, non-plastic	HS=1.4 ppm
30				EOB 10-31-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B13	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/31/2019	ELEVATION :	**N/A**
START TIME :	7:40	WATER LEVEL :	
END TIME :	10:00	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
			HA	1.0-1.5' - Silty sand (SM) Reddish brown, moist, trace coarse gravel Some kaolin lenses, hard, no plasyicity, trace specks of very fine black, possible lamp black	HS = 0.9 ppm Slight odor
			HA	2.5-3.0' - Silty clay (CL) White, dry, large lenses of kaolin clay in between silty sand (SM) Red, very fine, hard, no plasticity	HS=1.1 ppm Slight odor Concrete @ 3'bgs - possibly meter house foundation
5			9--14--15	5.0-5.5' Silty sand (SM). Reddish brown, dry, ~ 3" lense of Kaolin clay, white, trace wood debris, possible foundation for meter house, trace gravel	HS=0.2 ppm Slight odor
			7--14--18	7.5-8.0'. Sandy silt (SM) Reddish brown, dry, trace Kaolin, trace tar/asphalt like substance, hard, no plasticity	HS= 0.6 ppm Mothball odor Found piece of pipe ~ 7' bgs Trace asphalt-like substance
10			10--12--16	10-10.5'. Silty sand (SM) Reddish brown, damp, trace coarse gravel, trace asphalt substance (maybe slough) very fine, no plasticity, soft	HS=0.2 ppm Slight mothball odor, trace asphalt
15			11--11--14	15.0-15.5' - Same as above. No gravel or asphalt material	HS=0.2 ppm
20			8--8--15	19.5-20.0' Silty sand (SM) Reddish brown, damp, trace gravel (maybe sloug trace Kaolin chunks, soft, non plastic	HS= 0.2 ppm
25					
30				EOB 10-31-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B14	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/29/2019	ELEVATION :	**N/A**
START TIME :	8:05	WATER LEVEL :	
END TIME :	13:55	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
			HA	1.0-1.5' - Clayey silt (ML) Yellowish brown, dry, very fine, trace gravel and sand, low plasticity	BZ = 0.0 ppm
			HA	2.5-3.0' - Silt (ML) Yellowish brown, dry, powder fine, some gravel	
5			HA	5.0-5.5' Same as above	HS=0.4 ppm
			10--14--20	7.5-8.0' - Same as above	
10			14--18--23	10-10.5 - Same as above	HS=1.3 ppm
15			75 for 6"	15.0-15.5' - Same as above. Stiff	HS= 1.5 ppm
20			35 for 6"	19.5-20.0' Silty sand (ML) Yellowish brown, dry, coarse gravel, stiff, no plasticity	HS= 2.3 ppm
				EOB 10-29-19 ADS	
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B15	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	11/1/2019	ELEVATION :	**N/A**
START TIME :	13:30	WATER LEVEL :	
END TIME :	15:00	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
			100 for 4"	1.0-1.5' - Silty sand and gravel (SM/SW) Dark brown, dry, some clay, coarse gravel, well-graded, visible lamp black veins and staining, hard	HS=0.2 ppm Visible lamp black
			50 for 6"	2.5-3.0' - Silty sand (SM) Brown, dry, trace gravel and cemented sands, trace clay, medium dense, no plasticity	HS=0.1 ppm Visible lamp black
5			11--11--15	5.0-5.5' Silty sand and clay (ML/SC) Brown, dry, very hard, some gravel, trace lamp black	HS=0.3 ppm Trace lamp black
			13--14--19	7.5-8.0' - Sandy silt (SM) Brown, dry, some fine gravel, black rocks (possibly tar?), hard	HS= 0.2 ppm Possible lamp black
10			9--12--13	10-10.5 - Clayey silt (CL) Yellowish brown, dry, trace sand, very fine, stiff, visible lamp black	HS=0.3 ppm Visible lamp black Advance to 15' bgs
15			10--10--12	14.5-15.0' - Sandy silt (SM) Reddish brown, dry, some gravel, medium dense, no plasticity	HS= 0.2 ppm No visible lamp black
20					
25					
30				EOB 11-1-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B16	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/29/2019	ELEVATION :	**N/A**
START TIME :	8:05	WATER LEVEL :	
END TIME :	12:15	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
			HA	2.5-3.0' - Clayey silt (ML) Yellowish brown, dry, very fine, hard, trace gravel,	
5			HA	5.0-5.5' Gravelly silt (GM) Yellowish brown, dry, hard, some concrete and gravel, no plasticity	Concrete
10				10-10.5 - Gravelly silt, (GM) Yellowish brown, dry, very hard, well-graded some concrete and sand, no plasticity	HS=1.3 ppm Concrete
15				15.0-15.5' - Same as above	
20				19.5-20' Same as above	HS= 0.4 ppm
25					
30				EOB 10-29-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B17	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/30/2019	ELEVATION :	**N/A**
START TIME :	10:45	WATER LEVEL :	
END TIME :		LOGGER :	**I. Dinkleman**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
				Surface same across site: Silty sand w/gravel. (SM) Gravel angular up to 1/2" ϕ. Sand well-graded. Dry. 10 yr/5/2. Grayish bı	Reacts with HCL
			7--8--11	2.5-3.0' - Silty sand (SM) Few clay and trace gravel. Gravel angular up to 1/4" ϕ Sand well graded. Moist. 7.5 yr 3/4 Dark Brown	PID= 2.4 ppm Reacts with HCL
5			14--16--18	5.0-5.5' Silty sand with gravel (SM) Few clay. Dry. Asphalt and caliche identified in sample. Sand well graded. Angular-sub-angular Gravel and Asphalt up to 1/2" ϕ. 10 yr 5/3 Brown	PID=1.1 ppm Reacts with HCL
			11--11--13	7.5-8.0' - Same as above (SM) Asphalt up to 1/4" ϕ. Color 7.5 yr 4/4 Brown	PID= 1.4 ppm Reacts with HCL
10			9--13--14	10-10.5 - Silty sand (SM) Sand is well graded. Subangular. Interbedded with some clay clasts. Caliche observed in sample. Moist. 7.5 yr 5/6 Strong brown.	PID=3.1 ppm Reacts with HCL
15			10--12--12	15.0-15.5' - Same as above (SM)	PID= 2.5 ppm Reacts with HCL
20				19.5-20' Well graded sand with silt and gravel (SW-SM) Gravel angular up to 1/4" ϕ. Sand angular-Subangular 7.5 yr 5/8 Strong brown	PID=4.1 ppm Reacts with HCL
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B18	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :		ELEVATION :	**N/A**
START TIME :	10/28/19 - 17:00; 11/6/19 - 9:15	WATER LEVEL :	
END TIME :	11/6/19 - 10:00	LOGGER :	**A. Shwartz**
			L. Amskold

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
			HA	0-2.5' - Silt (ML) Yellowish red, dry, some gravel, trace sand	
			HA	2.5-3.0' - (SM) Yellowish red, dry, fine with gravel, well graded, no plasticity	
5			HA	5.0-5.5' - Same as above	
			HA	7.5-8.0' - same as above	
		1.5	11--15--16	9.0-10.5' - Clayey sand (SC) Dry, reddish brown, poorly graded sand. Trace brownish black root fragments (possible lampblack)	
10				Loose sand fine>>medium	0.3 ppm
		1.5	9--9--20	14.0-15.0' > Dry, light reddish brown, well graded sand with silt (SW-SM) Some coarse, subangular gravel	0.1 ppm
15				White caliche	
20					
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B19	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	11/1/2019	ELEVATION :	**N/A**
START TIME :	15:25	WATER LEVEL :	
END TIME :	11-2-19/8:25	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
			10--10--12	2.5-3.0' - Silty sand (SM) Brown with white Kaolin, dry, lamp black ribbons and staining, loose, no plasticity	HS=0.4 ppm Visible lamp black staining
5			7--10--11	5.0-5.5' Clayey silt (CL) Mottled brown with trace white Kaolin lenses, trace visible lamp black staining, trace fine gravel, medium dense	HS=0.2 ppm Lamp black staining and ribbons
			17--18--21	7.5-8.0' - Silty sand (SM) Brown, dry, trace Kaolin, trace visible lamp blac very fine, soft	HS=0.3 ppm Trace lamp black
10			50 for 6"	10-10.5 - Silty sand (SM) Reddish brown, dry, little clay, lense of boulde very fine, stiff, no visible lamp black	HS=0.1 ppm No lamp black
15			50 for 6"	15.0-15.5' - Same as above, no lense of boulder and hard, no plasticity, n	HS=0.0 ppm No lampblack
20			5--16--18	19.5-20' Silty sand (SM) Reddish brown with lenses of white Kaolin, moist, soft to medium,no plasticity, no visible lamp black	HS=0.1 ppm No lampblack
25					
30				EOB 11-2-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B20	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/30/2019	ELEVATION :	**N/A**
START TIME :	10:00	WATER LEVEL :	
END TIME :	11-2-19/9:55	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
			HA	2.5-3.0' - Silt (MH) Brown, dry, very fine, medium firm, low-medium plasticity	
				4.5-5.0' Darker brown, No visible lamp black	
5			HA	5.0-5.5' Gravelly silt (GM) Brown, dry, well graded, fine to coarse gravel, some trash, glass, bottles, etc. No plasticity	
			5--17--25	7.5-8.0' - Silty sand (SM) Yellowish brown, dry, mottled with white, some Kaolin, some fine gravel, hard	HS=0.1 ppm No lamp black
10			20--50 for 6"	9.5-10' - Clayey silt (ML) Reddish brown, damp, hard, low plasticity, visible specs and staining of lamp black	HS=0.2 ppm Visible LB Advance 5' bgs
			50 for 6"	14.5-15.0' Sandy silt (SM) Reddish brown, dry, very hard, little clay, little to no plasticity, black stains and trace ribbons of possible lamp black	HS=0.1 ppm Visible lampblack staining and ribbons Advance 5' bgs
15					
20			14--15--15	19.5-20' Silty sand with clay lenses (SM/CL) Mottled reddish brown and white, moist, soft, low plasticity	HS=0.1 ppm Clean. No visible lampblack
25					
				EOB 11-2-19 ADS	
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B21	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	11/1/2019	ELEVATION :	**N/A**
START TIME :	9:56	WATER LEVEL :	
END TIME :	13:05	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
			HA	2.5-3.0' - Sandy silt (SM) Brown, dry, trace Kaolin (white),	HS=0.2 ppm
			11--11-13	trace gravel, some concrete, visible lamp black	Visible lamp black and concrete
5			12--12-14	5.0-5.5' Sandy silt and fine gravel (SM/GC), well graded, brown, dry, fine with coarse concrete, visible lamp black	HS=0.2 ppm Visible lamp black and coarse concrete gravel ~ 3" diameter @ 5.5-6' bgs
			7--10-11	7.5-8.0' - Clayey silt (ML) Dark brown, umbre to reddish brown, medium dense, dry, visible lamp black	HS=0.2 ppm Visible lamp black
10			15--17-18	10-10.5' - Sandy silt (SM) Reddish brown, damp, trace Kaolin, trace gravel, very fine, stiff, non plastic	HS=0.4 ppm Visible lamp black ribbons and staining
			16-16-17	15.0-15.5' Clayey silt (ML) Reddish brown with white lenses of Kaolin, dry,	HS=0.3 ppm
15				soft, visible ribbons of lamp black	Ribbons of lamp black
20			13--13--15	19.5-20' Clayey silt (ML) Mottled light brown and white, dry, stiff, trace sand, medium plasticity	HS=0.4 ppm Visible staining of possible lamp black
25			8--8--9	24.5-25.0' Clayey silt (ML) Yellowish brown, moist, soft medium plasticity	HS=0.2 ppm No visible lamp black
30				EOB 11-1-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B22	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/29/2019	ELEVATION :	**N/A**
START TIME :	10:00	WATER LEVEL :	
END TIME :	15:10	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
			HA	2.5-3.0' - Silt (ML) Yellowish brown, dry, some gravel	BZ=0.0 ppm
5			30 for 6"	5.0-5.5' Clayey silt (ML) Yellowish brown, dry, lenses of Kaolin (white), low plasticity	
			50 for 6"	7.5-8.0' - Silty clay (CL) Mottled yellowish brown and white, dry, large lenses of Kaolin, low plasticity, very hard	HS=0.3 ppm
10			15--50 for 6"	10-10.5' - Silt (ML) Reddish brown, dry, trace gravel, very hard, no plasti	HS=0.8 ppm
15			50 for 6"	15.0-15.5' Clayey silt (ML) Reddish brown, trace Kaolin, very hard	HS=0.5 ppm
				Refusal @ 15.5 unless added water	
20					
25					
30				EOB 10-29-19/1510 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B23	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/31/2019	ELEVATION :	**N/A**
START TIME :	14:10	WATER LEVEL :	
END TIME :	16:35	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
			12--12--14	2.5-3.0' - Sandy silt (SM) Light brown, dry, little gravel, no plasticity	HS=0.2 ppm
5			9--15--16	5.0-5.5' Clayey silt (ML) Mottled light brown with white, dry, medium der lenses of Kaolin, low plasticity	HS=0.3 ppm
			11--15---17	7.5-8.0' - Silty sand (SM) Mottled light brown with white, dry, little Kaolin, little concrete gravel	HS=0.2 ppm
10			50 for 6"	9.5-10' - Sandy clay and gravel (CL) Light brown, dry, hard, concrete, possible subsurface slab, trace ribbons of lamp black in clay cuttings, low plasticity	HS=0.5 ppm Possible lamp black and concrete structure
15			9--14--14	14.5-15.0' Silty sand (SM) Light brown, dry, some gravel and concrete, very fine, stiff, trace ribbons of possible lamp black	HS=0.4 ppm Small ribbon of possible lamp black Advance another 5'
20			10--10--11	19.5-20.0' - Silty sand (SM) Reddish brown, dry, coarse sand, little gravel/concrete, loose, non plastic	HS=0.2 ppm
25					
30				EOB 10-31-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B24	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/30/2019	ELEVATION :	**N/A**
START TIME :	14:30	WATER LEVEL :	
END TIME :	16:00	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
			HA	2.5-3.0' - Clayey silt (ML) Yellowish brown, moist, firm, trace gravel, trace sand, low plasticity	HS=2.7 ppm
5			HA	5.0-5.5' Clayey sand (SC) Brown with specks of white, moist, Kaolin clay, trace fine gravel, some silt, medium, low plasticity	HS=3.1 ppm
			HA	7.5-8.0' - Clayey silt (ML) Brown, moist, medium, lenses of Kaolin white to pink, lense of black, possible lamp black at bottom, trace gravel	HS=0.2 ppm
10			9--13--14	10-10.5' Clayey silt (ML) Red with small lenses of black, possible lamp black, firm, very fine, low plasticity	HS=3.1 ppm
15			9--12--14	15-15.5' Gravely sand (SW) Brown, well graded medium grain, sand with fine gravel, loose, no plasticity	HS= 0.0 ppm
20			12--13--18	19.5-20.0' - Silty sand (SM) Brown, moist, trace coarse gravel, no plasticity	HS=0.0 ppm
25					
30				EOB 10-30-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	
D3118600.A.CS.EV.DG.05-1B	D-B25	SHEET 1 OF 2

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/30/2019 Hand auger to 9.0'	ELEVATION :	**N/A**
START TIME :	9:00 (start drilling 10/31/19)	WATER LEVEL :	**~ 26.0**
END TIME :	10/31/19 - 16:45	LOGGER :	**I. Dinkelman**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
				0-.0.5' - Silty sand (SH) with few gravel, sand is fine to medium grained Gravel up to 1/4" ϕ. Angular. Dry. 7.5 yr 5/4 Brown	PID 0.0 ppm Reacts with HCL - some organics (roots)
				2.5-3.0' - Silty sand with gravel (SM). Sand well graded. Gravel up to 1.0 Angular. Dry. 7.5 yr 6/6 Reddish yellow	PID 1.1 ppm Reacts with HCL. D-B25-2.5-3.0 @ 16:20
5				5.0-5.5' - Silty sand (SM) Trace gravel. Sand well graded. Gravel up to 1/4" ϕ. Gravel angular. Sand subangular. Dry. 7.5 yr 5/6 Strong brown	PID= 0.4 ppm Reacts with HCL D-B25 - 5.0-5.5 @ 16:30
				7.5-8.0' - Silty sand with gravel (SM). Gravel up to 1/2" ϕ. Angular. Sand well graded. Dry. 7.5 yr 4/6 Strong brown	PID=0.0 ppm Reacts with HCL D-B25 - 7.5-8.0 @ 16:55
				9.0' Obstruction. Refusal with hand auger. Large rock @ 9.0'	**10/31/2019 ↓**
10		BC	22/31	10-10.5 - Silty sand with gravel (SM). Gravel up to 1/2" ϕ. Angular. Sand is well graded. Dry. 7.5 yr 5/6 Strong brown.	PID=0.5 ppm Reacts with HCL D-B25 - 10.0-10.5 @ 9:30
				10.5 13.0' - Same as above.	
				13.0-14.0' - Silty sand (SM). Sand is well graded. Angular-subangular. Dry. 7.5 yr 7/4 Pink.	PID=1.1 ppm Reacts with HCL
15				14.0-15.0' - Sandy silt (ML). Sand well graded. Angular. Dry. Slow dilater Low toughness and dry strength. Low plasticity. 7.5 yr 8/3. Pink.	PID= 3.3 ppm Reacts with HCL Few gravel up to 3/4" ϕ
				15.0-16.0' - Silt with sand (ML) Sand poorly graded. Fine to very fine. Dry. Slow dilatency. Caliche in sample in thin layers or clasts. 7.5 yr 6/4. Light	PID= 3.3 ppm Reacts with HCL D-B25 - 15.0-15.5 @ 10:50
				16.0-17.5' - Silt with sand (ML). Sand well graded. Moderately to well cemented. Some clay. No dilatency. 7.5 yr 4/6. Strong brown	PID=15.3 ppm
20				17.5-20.0' - Clayey silt (ML/CL). Few sand. Dry. Sand well graded. 7.5 yr 6/4. Light brown	PID= 1.8 ppm
				20.0-21.0' - Silty sand (SM) with few clay. Dry. 7.5 yr 5/4. Brown. Sand is well graded. Subangular.	PID= 3.6 ppm B25 - 20.0-21.5 @ 11:25
				21.0-23.0' - Well graded sand with silt (SW-SM). Angular 7.5 yr 5/4. Brown	PID= 1.9 ppm
25				23.0-25.0' - Fat clay with sand (CH). Moist. Sand well graded. No dilatency. High toughness. High plasticity. High to very high dry strength. 7.5 yr 4/6 Strong brown	PID= 11.7 ppm
				25.0-29.5' - Fat clay (CH) Moist. Clasts of Caliche observed in core. No dilatency. High plasticity. High dry strength. 7.5 yr 4/6. Strong brown.	PID= 8.3 ppm D-B25 - 25.0-25.5 MS/MSD
30				29.5-30.0' - Well graded sand (SW). Few silt. Sand angular-subangular. Moist. 10 yr 5/3. Brown	PID= 4.1 ppm Encountered water

JACOBS	PROJECT NUMBER D3118600.A.CS.EV.DG.05-1B	BORING NUMBER D-B25	SHEET 2 OF 2

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/30/2019 Hand au	ELEVATION :	**N/A**
START TIME :	9:00 (start drilling 10/31/19)	WATER LEVEL :	**~ 26.0**
END TIME :	10/31/19 - 16:45	LOGGER :	**I. Dinkelman**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
30		BC=	7/4	30.0-31.0' - Lean clay with sand (CL). Sand well graded. Subangular. Small yellow grains are observed in core sample. Clay is marbeled in appearance with white, yellowish brown and darker soils. Few areas appear to be redox condition Fe staining. 10 yr 6/4. Light yellowish brown.	PID= 1.1 ppm D-B25 - 30.0-30.5 @ 13:20
				31.0-31.5' - Fat clay (CH). Trace sand. No dilatency. High plasticity. High dry strength and toughness. 10 yr 6/3. Pale brown.	PID= 10.8 ppm
				31.5-33.0' - Appears to be a weathered caliche. Reacts strongly with HCL. From white page color. 10 yr _/1. White	PID=21.6 ppm
35					
				33.0-34.0' - Lean clay with sand (CL). Weathered clasts of caliche (?) No dilatency. Medium dry strength and toughness. 7.5 yr 5/4. Brown	PID=13.6 ppm
				34.0-37.0' - Same as 31.5 - 33.0' Weathered caliche	PID=7.5 ppm
				37.0-38.0' - Well graded sand with clay (SW-SC). Few silt. Angular-subangular. Poorly cemented with trace moderately cemented clasts.	PID=10.5 ppm
40				Wet. 7.5 yr 4/4. Brown	
				38.0-40.0' - Fat clay (CH). High dry strength. No dilatency. High toughn and plasticity. Moist. 7.5 yr 4/6. Strong brown.	PID= 15.9 ppm
		BC=	8	40.0-40.5' Same as above (38-40')	PID= 1.9 ppm D-B25 - 40-40.5 @ 16:20
45				40.5-50.0' - mSame as above (38-40')	PID 41.0-43.0=1.7 ppm 43.0-45.5=9.7 ppm 45.5-47.0=17.4 ppm 47.0-48.5=4.7 ppm 48.5-50.0=0.8 ppm
50					
55					
60					

JACOBS	PROJECT NUMBER D3118600.A.CS.EV.DG.05-1B	BORING NUMBER D-B26	SHEET 1 OF 2

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	11/1/2019 Hand auger to 5.0'	ELEVATION :	**N/A**
START TIME :	11/2/19 - Drilling start @ 9:10	WATER LEVEL :	**~ 26.5**
END TIME :	11/3/19 - 16:00	LOGGER :	**I. Dinkelman**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
				0-5.0.5' - Silty sand (SM) with gravel, sand well graded. Gravel up to 1/2" ϕ. Angular. Dry. 7.5 yr 4/3 Brown	PID 0.0 ppm
				2.5-3.0' - Silty sand (SM). Trace gravel. Sand well graded. Angular-suba Gravel up to 1/4" ϕ. Angular. Dry. 7.5 yr 4/6. Strong brown	PID 1.4 ppm D-B26-2.5-3.0 @ 14:15 (Field duplicate D-FD05 - T10119) 14:20
5				5.0-5.5' - Silty sand (SM) Few gravel up to 1/2" ϕ. Gravel Caliche. Sand well graded. Subangular. Dry. 7.5 yr 5/6. Strong brown	PID= 0.1 ppm D-B26 - 5.0-5.5 @ 14:30 (MS/MSD)
					November 2, 2019
				5.5-7.5' - Silty sand (SM). Interbedded with layers of caliche. Strong reaction with HCL. Sand well graded. Angular-subangular. @ 6.0' observed black rock (lamp black?). Caliche up to 1.5"ϕ. 7.5 yr 4/6. Strong brown	PID=0.6 ppm Reacts strongly to HCL
			9	7.5-10.0' - Well graded sand with silt and gravel. (SW-SM). Moist. Angular-subangular. Gravel up to 3/4" ϕ. 7.5 yr 4/6. Strong brown	PID=2.1 ppm. No reaction to HCL D-B26 - 7.5-8.0 @ 9:50.
10			15	10.0-10.5 - Silty sand with gravel (SM). Sand well graded. Subangular. Gravel up to 2.0" ϕ. Angular. Broken pieces of caliche. Moist. 7.5 yr 4/6. Strong brown	PID=2.3 ppm Reacts with HCL D-B26 - 10.0-10.5 @ 10:15 (MS/MSD)
				10.5-11.0' - Same as above. (10.0-10.5')	
				11.0-15.0' - Well graded sand with silt and gravel. (SW-SM). Sand is ang to subangular. Gravel up to 2.5" ϕ. Angular. 7.5 yr 4/6. Strong brown.	
15			15	15.0-15.5' - Well graded sand with silt and gravel (SW-SM).	PID= 2.1 ppm D-B26 - 15.0-15.5 @ 10:35
				15.5-20.0' - Same as above (SW-SM)	PID=3.0 ppm
20				20.0-20.5' - Same as above (SW-SM)	D-B26 - 20.0-20.5' @ 10:50
				20.5-23.0' - Same as above(SW-SM).	
25				23.0-25.0' - Clayey sand (SC). Sand is well graded. Angular. Moist. 5 yr 5/8 Yellowish red.	PID= 8.9 ppm (23.0-24.0)
				25.0-26.0' - Clayey sand (SC). Sand is poorly graded. Subangular-Subrounded. Medium/fine sand. Moist 7.5 yr 5/4. Brown	PID= 12.2 ppm D-B26 - 25.0-25.5 @ 11:15
				26.0-28.0' -Appears to be weathered caliche. Reacts strongly with HCL. From white page color 10 yr -/1 white.	PID=12.8 ppm Encountered GW @ 26'
30				28.0-30.0' - Fat clay (CH). Moist. No dilatency. Very stiff. High toughness and dry strength. 2.5 yr 6/2 light brownish gray.	PID= 17.2 ppm

JACOBS

PROJECT NUMBER	BORING NUMBER	
D3118600.A.CS.EV.DG.05-1B	D-B26	2 OF 2

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/30/2019 Hand au	ELEVATION :	**N/A**
START TIME :	9:00 (start drilling 10/31/19)	WATER LEVEL :	**~ 26.5**
END TIME :	10/31/19 - 16:45	LOGGER :	**I. Dinkelman**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
30				30.0-31.5' - Fat clay with sand (CH). Sand is well graded. Angular. No dilate High dry strength and toughness. 7.5 yr 7/3. Pink. (Moist)	PID= 5.9 ppm D-B26 - 30.0-31.5 @ 13:25
				31.5-32.5' - Same as above exceept color is 7.5 yr 6/6. Reddish yellow	PID=6.8 ppm
				32.5-33.0' - Fat clay (CH). Moist. No dilatency. Very stiff. High toughness and dry strength. 5 yr 5/4. Reddish brown	PID= 6.8 ppm
35				33.0-35.0' - Lean clay with sand (CL). Moist to wet. Sand well graded. Angular. 7.5 yr 5/3. Brown.	PID=6.8 ppm
				35.0-38.5' - Calcareous layer. Reacts strongly with HCL. May be weathered caliche. Hard consistency. Resembles a fat clay. No dilatency. High toughness and plasticity. From white page. 10 yr -/1 white.	PID=7.4 ppm
				38.5-39.0' - Well graded sand with clay. (SW-SC). Trace gravel. Sand is angular to subangular. Gravel up to 1/2"ϕ subangular. Wet. 7.5 yr 4/4. Brown.	PID=7.4 ppm
40				39.0-50.0' - Fat clay (CH). Interbedded with a lean clay with sand @ 43.0' and 45.0'. Moist. Fat clay 7.5 yr 4/6. Strong brown Lean clay 5 yr 7/4. Pink No dilatency. Very stiff. High toughness and plasticity. High dry strength.	39.0-40.0' - PID=1.7 ppm 40.0-42.0' - PID=10.2 ppm D-B26-40.0-40.5 @14:30 42.0-44.0' - PID=14.3 ppm 44.0-46.0' - PID=3.8 ppm
45					46.0-48.0' - PID=11.5 ppm 48.0-50.0' - PID=8.7 ppm
50					
55					
60					

JACOBS	PROJECT NUMBER D3118600.A.CS.EV.DG.05-1B	BORING NUMBER D-B27	SHEET 1 OF 2

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	11/3/2019 Hand auger 10:00-10:30	ELEVATION :	**N/A**
START TIME :	11/3/19 - 15:00	WATER LEVEL :	
END TIME :	11/4/19 - 11:30	LOGGER :	**I. Dinkelman**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
				Surface - silty sand with gravel (SM). Dry. Sand well graded. Angular to subangular. Gravel up to 2.0" Φ. Some cobbles and asphalt debris in vicinity of well. 7.5 yr 5/6. Strong brown	
				2.5-3.0' - Silty sand with gravel (SM). Dry. Caliche observed in sample. Sand is well graded. Subangular. Gravel up to 1/4" Φ angular. 7.5 yr 6/4. Light brown	PID 1.6 ppm Reacts with HCL D-B27-2.5-3.0 @ 10:00 D - FD01 - 110319 @ 10:05
5				5.0-5.5' - Silty sand with gravel (SM). Dry. Gravel angular up to 1/4" ϕ. Sand is well graded. Angular - subangular. 5 yr 5/6. Yellowish red.	PID= 1.9 ppm D-B27 - 5.0-5.5 @ 10:10
				5.5-7.5' - Silty sand (SM). Laminated with caliche. Trace gravel. Angular. Sand is well graded. Subangular. 5 yr 5/6. Yellowish red.	PID=11.1 ppm
				7.5-8.0' - Silt with sand (ML). Reacts with HCL. Dry. Few clasts of moderately cemented silt and sand. 7.5 yr 6/4. Light brown	PID=5.6 ppm
				8.0-8.5' - Silty sand (SM). Few laminates of caliche. (Reacts with HCL) Trace gravel. Sand is well graded. Angular. Gravel up to 1/2" Φ. Angular. 7.5 yr 5/6. Strong brown	PID=5.6 ppm
				8.5-9.0' - Caliche layer reacts strongly to HCL. Predominately caliche intermixed with silt and sand. Moist. 7.5 yr 5/2. Pinkish white.	PID=5.6 ppm
10				9.0-10.0' - Silty sand (SM). Few laminates of caliche. Few gravel. (caliche clasts up to 1.5"Φ). Sand is well graded. Angular. 7.5 yr 4/4. Brown	PID= 5.6 ppm
				10.0-12.0' - Silty sand (SM). Dry. Sand well graded. Trace gravel up to 1/4"Φ. Gravel angular. Sand angular-subangular. 7.5 yr 4/6. Strong brown	PID=3.1 ppm
				12.0-14.0' - Well graded sand with silt (SW-SM). Trace gravel. Sand ang Gravel up to 1/4"Φ. 7.5 yr 5/8. Strong brown.	PID=2.7 ppm
15				14.0-16.0' - Well graded sand with silt and gravel (SW-SM). Gravel up to 1/2"Φ. Angular. Sand angular-subangular. 7.5 yr 5/8. Strong brown. Dry.	PID= 4.4 ppm
				16.0-17.5' - Silty sand (SM). Sand is poorly graded fine to medium grained. Angular. Trace gravel. 7.5 yr 5/8. Strong brown.	PID=4.4 ppm
				17.5-18.5' - Well gradedf sand (SW). Trace gravel. Gravel up to 1/4"Φ. Sand and gravel subangular. Dry. 7.5 yr 5/6. Strong brown	PID=5.9 ppm
20				18.5-20.0'-Well graded sand with gravel (SW). Gravel up to 1.5"Φ. Sub-angular. Sand subangular. Moist. 7.5 yr 4/4. Brown.	PID=5.9 ppm
				20.0-21.0' - Same as above. (SW)	PID=12.9 ppm
25				21.0-24.5' - Clayey sand with gravel (SC). Gravel up to 1/2"Φ. Angular. Sand is well graded. Subangular. Moist. 5 yr 4/6. Yellowish red. 24.5-25.0' - Sandy lean clay (CL). Moist. Sand is well graded. Angular-subangular. Moist. 5 yr 4/6. Yellowish red.	PID - 21.22'=12.9 ppm 21-24'=30.5 ppm 24-24.5'=18.2 ppm PID=18.2 ppm
				25.0-25.5' - Clayey sand (SC). Moist. Sand poorly graded. Subangular. 7.5 yr 4/6. Strong brown.	PID=12.9 ppm
				25.5-27.0' - Fat clay (CH). Few sand. Moist. Sand subangular. 7.5 yr 4/6. Strong brown.	GW ~ 26.5'

JACOBS	PROJECT NUMBER D3118600.A.CS.EV.DG.05-1B	BORING NUMBER D-B27	2 OF 2

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/30/2019 Hand au	ELEVATION :	**N/A**
START TIME :	9:00 (start drilling 10/31/19)	WATER LEVEL :	
END TIME :	10/31/19 - 16:45	LOGGER :	**I. Dinkelman**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone
				27.0-29.0' - Clayey sand (SC). Wet. Sand poorly graded. Subangular. 7.5 yr 5/6. Strong brown.	PID= 5.9 ppm D-B26 - 30.0-31.5 @ 13:25
30				29.0-30.0' - Well graded sand (SW). Wet. Trace gravel up to 1/4"Φ. Subangular. Sand subangular. 7.5 yr 5/4. Brown.	**Stop drilling 11/3/19 @ 30.0'** **November 4, 2019 ↓**
				30.0-30.5' - Silty sand (SM) with few clay. Sand poorly graded. Wet. Subangular. 7.5 yr 5/4. Brown.	PID=8.9 ppm D-B27 - 30.0-30.5 @ 9:50
				30.5-31.0 - Well graded sand (SW). Trace gravel. Up to 1/4"Φ angular. Sand is subangular. 7.5 yr 5/3. Brown	
				31.0-31.5 - Poorly graded sand (SP). Wet. Sand subrounded/subangular. 10 yr 7/2. Light gray.	
35				31.5-35.0' - Fat clay (CH). Few sand. No dilatency. High toughness and plasticity. High dry strength. Moist. 7.5 yr 5/2. Brown Fracture @ 34.5-35.0(?)	PID - 31.5-32.0=8.9 ppm PID - 32.0-34.0=22.2 ppm
				35.0-39.0' - Appears to be weathered caliche. Very strong reaction to HCl Hard consistency. Very stiff. Resembles a fat clay. No dilatency. 10 yr -/white.	D-B27 - 40.0-40.5 @ 11:05 PID - 40-42'=19.2 ppm PID - 42-44'=16.7 ppm PID - 44-46'=17.3 ppm
40				39.0-50.0' - Fat clay (CH). Moist-wet. High dry strength and toughness. High plasticity. 7.5 yr 4/6. Strong brown..	PID - 46-48'=11.4 ppm PID - 48-50'=15.1 ppm
45					
50					
55					
60					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B28	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/29/2019	ELEVATION :	**N/A**
START TIME :	12:25	WATER LEVEL :	
END TIME :	16:15	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
5			HA	5.0-5.5' Gravely silt (GM) Yellowish brown, well graded, very fine, very d very hard, no plasticity	HS=0.3 ppm BZ= 0.0 ppm
10			19--20--30	10-10.5' Gravely silt (GM) Same as above with coarse gravel and trace Kaolin	HS=0.5 ppm
15			40-50 for 6"	15-15.5' Clayey silt (ML) Reddish brown, dry, very hard, very fine, trace g lenses ~ 1" of white Kaolin, no plasticity	
20				19.5-20.0' - Silty sand (SM) Reddish brown, damp, some gravel, well graded, very hard, no plasticity	HS=0.4 ppm
25					
30				EOB 10-29-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	
D3118600.A.CS.EV.DG.05-1B	D-B29	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	11/5/2019 - 15:05	ELEVATION :	**N/A**
START TIME :	11/7/19 - 7:55	WATER LEVEL :	
END TIME :	11/7/19 - 9:15	LOGGER :	**L. Amskold**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
				Hand auger 0-5 (2 attempts refusal @ 1.5' bgs)	
				Third attempt successful	
		grass stems	16--22--23	4.5-6.0' - Dry, reddish brown {5 yr 5/3] Well cleaned sand with silt (SW-SM)	0.0
5				Trace fine to medium subangular gravel	
				Broken glass and debris present	
		6"	50(6)	6.0-7.5' - Dry, pinkish clay [5-yr 6/2] well graded sand with fat clay	0.0
				Trace Gravel, caliche, clay medium plasticity (SW-SC)	
		6"		7.5-9 - Dry compact light red {2.5 yr 6/6]	0.0
				Material as described above. (SW-SC)	
					0.1
		18"	50(6)	9.5-11.0'	
10			21--27--29	Material as above (SW-SC)	
		0"	17--21--22	No recovery. (shoe only)	0.1
					0.1
		18"	12--15--20	14.5' - Material as described above (SW-SC)	
15		6"	17--15--20	15.5' - Same	0.2
20		8"	50(6)	19.5' - Dry, red [2.5 yr - 4/6] Well graded sand with silt (SW-SM)	0.1
				Trace Gravel. Sand subangular. Gravel fine, subrounded	
				EOH @ 21' bgs	
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B30	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	11/1/2019	ELEVATION :	**N/A**
START TIME :	7:55	WATER LEVEL :	
END TIME :	9:30	LOGGER :	**A. Shwartz**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
5			10--10--12	5.0-5.5' Sandy silt (SM) Brown, damp, little gravel, fine sand some Kaolin clay chunks, visible lamp black, soft, no plasticity	HS=0.0 ppm Visible lamp black Collected small piece of tar
10			50 for 6"	10-10.5' - Same as above, possible staining from lamp black in very small amounts, dry and hard	HS=0.1 ppm Possible staining from lamp black No visible ribbons or chunks
15			12--14--15	15-15.5' Clayey silt (CL) Brown, dry, lenses of white Kaolin, some fine gr black, but doesn't appear to be tar or lamp black, obsidian?, firm, low plasticit	HS=0.1 ppm No visible lamp black
20			7--8--10	19.5-20.0' - Silty sand (SM) Reddish brown, lenses of yellow clayey sanc moist, firm to medium, no plasticity, no visible lamp black or black rocks/grav	HS=0.1 ppm Clean
25					
30				EOB 11-1-19 ADS	

JACOBS

PROJECT NUMBER	BORING NUMBER	
D3118600.A.CS.EV.DG.05-1B	D-B31	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/28/19 - 13:50	ELEVATION :	**N/A**
START TIME :	11/6/19 - 12:30	WATER LEVEL :	
END TIME :	11/6/19 - 13:25	LOGGER :	**L. Amskold**
			A. Shwartz

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
				0-5.0' -Clayey silt (ML) Dark brown, damp, trace gravel, trace sand, very hard, low plasticity	
5				5.0-5.5' - Silty sand (SM) yellowish brown, dry, well graded, no plasticity	
10		4"	50	(6") Dry, cemented clayey sand. Fat clay (SC) Light brown [7.5 yr 6/3] dry, cemented fat clayey sand No dilatency, meduim plasticity, low toughness, caliche	0.1
15		10"	16--16--18	14.5-16' - Material as above 4" damp, loose, yellowish red [5 yr 4/6] Poorly graded sand with silt (SP-SM). Sand fine>>medium, trace Coarse	1.3
20		6"	15--17--19	Material as above, damp (SP-SM)	0.2
				EOH @ 21' bgs	
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B32	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/28/19 - 12:10	ELEVATION :	**N/A**
START TIME :	11/6/19 - 10:15	WATER LEVEL :	
END TIME :	11/6/19 - 11:00	LOGGER :	**A. Shwartz**
			L. Amskold

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
			HA	0-5' - Clayey silt (ML) Dark brown, dry, trace gravel, trace sand very fine, hard	
5			HA	5.0-5.5' Silty sand (SM) Yellowish brown, dry, well graded, no plasticity	
10		~4"	12--12--21	9.5-11.0' - No recovery	0.1
		~4"	50 - 4"	No recovery - logging material in cutting shoe/core catcher	
				Dry, cemented clayey sand, light brown [7.5 yr 6/3] Fat clay (SC) No dilatency. Medium plasticity	
		~6"	50-6"	12.5-15.0' - Material as above. Less cement (SC).	0.0
15					
		6"	5--14--15	19.5-21 - Material as above. No dilatency. Medium plasticity	0.0
20				EOH @ 21'	
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B33	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/28/19 - 11:20	ELEVATION :	**N/A**
START TIME :	11/6/19 - 9:15	WATER LEVEL :	
END TIME :	11/6/19 - 10:00	LOGGER :	**A. Shwartz**
			L. Amskold

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
5	0-		HA	5.0-5.5' Clayey silt (ML) Dark brown, damp, trace gravel Trace sand, very fine, medium plasticity, hard	BZ=0.0 ppm
		1.5	9--15--16	9.5-11.0' - Damp well graded sand with silt (SW-SM) Caliche, reddish brown [2.5 yr 4/6] trace fine, subrounded gravel and oxidized root fragments	0.2 ppm
10					
		1.5	15--16--18	14.5-16.0' - Dry, hard, tough fat clayey sand (SC) fine >> medium trace coarse, red [2.5 yr 4/6]	0.1 ppm
15				Caliche, medium plasticity	
		1.5	7--12--13	19.5-21.0 - Moist, light reddish gray [2-5 yr 7/1]	
20				silty sand (SM), red oxidized root traces caliche, firm-soft *(i.e. ranges firm to soft)*	0.1 ppm
				EOH - 21' bgs	
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	
D3118600.A.CS.EV.DG.05-1B	D-B34	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/28/19 - 8:45	ELEVATION :	**N/A**
START TIME :	11/6/19 - 8:15	WATER LEVEL :	
END TIME :	11/6/19 - 9:00	LOGGER :	**A. Shwartz**
			L. Amskold

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
5	0-5.5'		HA	5.0-5.5' Clayey silt (ML) Dark brown, damp, trace gravel Trace sand, very fine, medium plasticity, hard	BZ=0.0 ppm
		1.5	16--10--15	9.5-12.5' - Dry, loose well graded sand with silt and gravel (SW-SM) Weak red [16 yr 4/3]	
10				Lower fine >>medium subangular, white caliche (tr)	0.1 ppm 6.0 ppm
		1.5	19--22--23	14.5-16.0' - Damp, compact, weak red, well graded sand with fat clay. (SW-SC) Trace gravel, sand subangular, gravel fine, subangular	0.1 ppm
15				No recovery on second splitspoon. (2 attempts)	
		1.5	26--23--25	19.5-20.75 - Material as described above.	
20				Well graded sand with fat clay (SW-SC)	0.1 ppm
				20.75-21.0 - Moist, very pale brown, poorly graded sand with silt (SP-SM) 16 yr 4/4	
				EOH - (21)	
25					
30					

JACOBS

PROJECT NUMBER	BORING NUMBER	SHEET 1 OF 1
D3118600.A.CS.EV.DG.05-1B	D-B35	

SOIL BORING LOG

PROJECT :	**APS Douglas former MGP**	DRILLING CONTRACTOR :	**Cascade Drilling**
LOCATION :	**Douglas, AZ**	DRILLING METHOD AND EQUIPMENT USED :	**Hollow Stem Auger**
DATE :	10/28/19 - 15:00	ELEVATION :	**N/A**
START TIME :	11/5/19 - 13:50	WATER LEVEL :	
END TIME :	11/5/19 - 14:35	LOGGER :	**A. Shwartz**
			L. Amskold

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	blow counts	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm) Breathing Zone 0.0 ppm
	0-1'			0-1' - Silty sand (SM) Light yellowish brown, dry, well graded, some gravel	
5				5.0-5.5' Silt (ML) Light reddish brown, damp, very fine, poorly graded, low plasticity	
10		1.5		10-10.5' - Dry, loose reddish brown wekk graded sand with silt (SW-SM) Trace fine subangular gravel. White caliche. Possible lamp black (black shiny nodules) 5 yr 4/4	0.1 ppm
15		1.5	9--9--10	15-15.5' - Dry, very hard, very tough clayey sand (SC) Light reddish brov Fat clay, well graded sand, Trace subangular fine gravel. 5 yr 4/4	0.0 ppm
20		1.5		20.0-20.5 - (SP-SC) Material same as above, very pale	0.0 ppm
	21 EOH			20.5-21.0 - Moist, light yellowish brown-white, poorly graded sand with silt (SP-SM) 16 yr 4/4	
				EOH	
25					
30					

Appendix E
Well Construction Diagrams and Development Logs

PROJECT NUMBER	WELL NUMBER
D3118600.A.CS.EV.DG.05-1B	D-MW25 (boring B-25) SHEET 1 OF 1

JACOBS

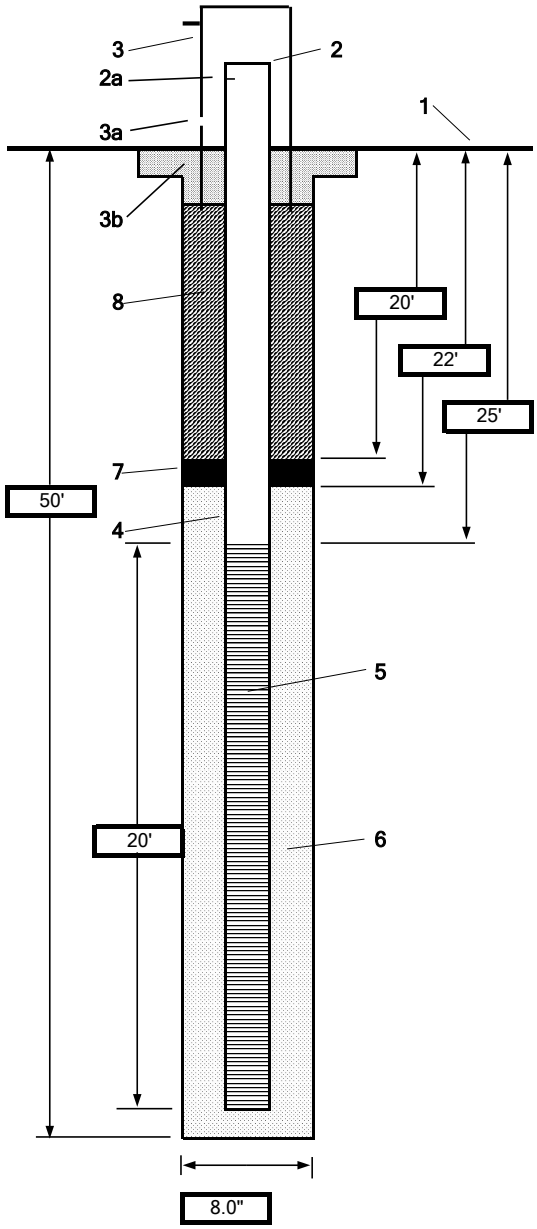
WELL COMPLETION DIAGRAM

PROJECT : APS former MGP Site LOCATION : Douglas, AZ

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD AND EQUIPMENT USED : Sonic 600 SC

WATER LEVELS : 26.38' START :11/1/2019:1040 END:11/1/2019:1530 LOGGER: Ilka Dinkleman



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Monument 8"
a) weep hole?: No
b) concrete pad dimensions: 2'x2'

4- Dia./type of well casing: 4" schedule 40 pvc

5- Type/slot size of screen: 0.01

6- Type screen filter: 12/20 sand
a) Quantity used: 13 bags

7- Type of seal: 3/8" bentonite chips
a) Quantity used: 1 bag

8- Grout
a) Grout mix used: Quick gel, Portland
b) Method of placement: pour
c) Vol. of well casing grout: 20 gallons

Development method: Surge and Purge

Development time: 11/6/2019

Estimated purge volume: 98 gallons

Comments: Borehole backfilled with filterpack from 50' to 45' such that the screen interval is from 25-45' bgs

JACOBS

PROJECT NUMBER	WELL NUMBER	
D3118600.A.CS.EV.DG.05-1B	D-MW25 (boring B-25)	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **APS Douglas former MGP** LOCATION : **Douglas, AZ**

DEVELOPMENT CONTRACTOR **Cascade Drilling**

DEVELOPMENT METHOD AND EQUIPMENT USED : Smeal Hoist Development Rig

START WATER LEVELS : 26.38' START : 11/6/2019 14:00 END : 17:05 LOGGER : **I. Dinkleman**

MAXIMUM DRAWDOWN DURING PUMPING: 9.59'

RANGE AND AVERAGE DISCHARGE RATE: 0.5-1.08 ~ 0.68 GPM

TOTAL QUANTITY OF WATER DISCHARGED: 98 - 102 gal

DISPOSITION OF DISCHARGE WATER: initial purge water very turbid to very clear. Final =1.4NTU

NR=not recordable, NTU too high

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (ms/cm)	DO (mg/L)	ORP	(color, odor, sheen, sediment, etc.)	
1515	10	33.14	NR	18.64	7.32	1153	4.48	185.6	Turbid	Low production, s
1525	18	34.58	NR	17.75	7.09	1126	2.62	183.1	Turbid	
1535	24	35.36	NR	17.45	7.02	1092	2.05	180	Turbid	
1545	30	35.38	NR	17.97	7.03	1091	2.14	176.4	Turbid	
1555	34	35.42	35.2	17.76	7.06	1079	2.32	170.8	Turbid	
1605	40	35.76	229	17.73	7.03	1100	2.01	165.7	cloudy	
1615	45	36.97	500	17.35	7.04	1080	2.06	161.1	very cloudy	
1625	51	34.89	550	17.49	7.08	1097	2.31	158.9	very cloudy	
1635	58	35.11	80	17.41	7.05	1083	2.06	155.4	cloudy	
1645	65	35.09	15	17.5	7.03	1083	1.86	146.3	clear	
1655	72	35.14	5.5	17.3	7.04	1085	1.86	136.6	clear	
1700	75	35.12	1.4	17.42	7.04	1081	1.89	133.8	clear	

PROJECT NUMBER	WELL NUMBER
D3118600.A.CS.EV.DG.05-1B	D-MW26 (boring B-26) SHEET 1 OF 1

JACOBS

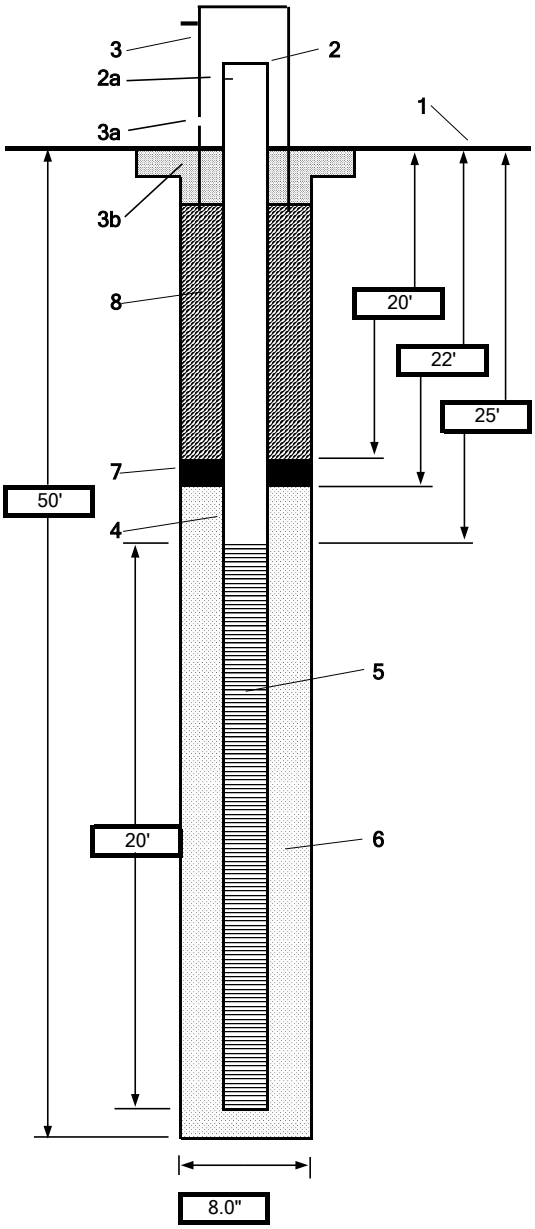
WELL COMPLETION DIAGRAM

PROJECT : APS former MGP Site LOCATION : Douglas, AZ

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD AND EQUIPMENT USED : Sonic 600 SC

WATER LEVELS : 28.72' START:11/3/2019:0805 END:11/3/2019:1100 LOGGER : Ilka Dinkleman



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Monument 8", 3' Stickup, 5 bags
a) weep hole?: No
b) concrete pad dimensions: 2'x2'

4- Dia./type of well casing: 4" schedule 40 pvc

5- Type/slot size of screen: 0.010

6- Type screen filter: 12/20 sand
a) Quantity used: 16 bags

7- Type of seal: 3/8" bentonite chips
a) Quantity used: 1 bag

8- Grout
a) Grout mix used: Quick gel, Portland
b) Method of placement: pour/tremmie
c) Vol. of well casing grout: 20 gallons

Development method: Surge and Purge

Development time: 11/6/2019

Estimated purge volume: 177 gallons

Comments

JACOBS

PROJECT NUMBER	WELL NUMBER	
D3118600.A.CS.EV.DG.05-1B	D-MW26 (boring B-26)	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **APS Douglas former MGP** LOCATION : **Douglas, AZ**

DEVELOPMENT CONTRACTOR **Cascade Drilling**

DEVELOPMENT METHOD AND EQUIPMENT USED : Smeal Hoist Development Rig

START WATER LEVELS : 28.72' START : 11/6/2019 0955 END : LOGGER : **I. Dinkleman**

MAXIMUM DRAWDOWN DURING PUMPING: 1.09'

RANGE AND AVERAGE DISCHARGE RATE: 1.08-1.7 GPM

TOTAL QUANTITY OF WATER DISCHARGED: 177 Gal

DISPOSITION OF DISCHARGE WATER: Clear <5.0 ntu, Initial Purge water very turbi and silty

NR=not recordable, NTU too high

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (ms/cm)	DO (mg/L)	ORP mv	(color, odor, sheen, sediment, etc.)
1105	11	29.7	NR	19.89	6.93	1599	2.45	240.9	Turbid
1115	19	29.77	NR	19.63	6.99	1656	2.06	226.1	Turbid
1125	47	29.83	NR	19.76	7.02	1662	2.3	216.7	Turbid
1135	60	29.83	900	19.57	7.01	1663	2.14	211.4	Turbid
1145	75	29.84	550	19.4	7.02	1662	2.35	205.9	very cloudy
1155	91	29.67	240	19.48	7.03	1665	2.36	200.9	cloudy
1205	102	29.68	150	19.4	7.04	1661	2.57	198.4	cloudy
1215	119	29.8	60	19.32	7.02	1670	2.11	195	cloudy
1225	127	29.56	37	19.44	7.01	1664	2.14	192.4	clearing up
1235	144	29.49	22	19.96	7.02	1667	2.18	186.8	clear
1240	149	29.48	13.7	19.43	7.02	1669	2.33	183.2	clear
1245	159	29.47	12.6	19.87	7.04	1673	2.47	179.6	clear
1255	164	29.31	5.96	19.81	7.02	1670	2.39	177.1	clear
1305	175	29.58	4.14	19.6	7.01	1674	2.1	170.5	clear

PROJECT NUMBER	WELL NUMBER
D3118600.A.CS.EV.DG.05-1B	D-MW27 (boring B-27) SHEET 1 OF 1

JACOBS

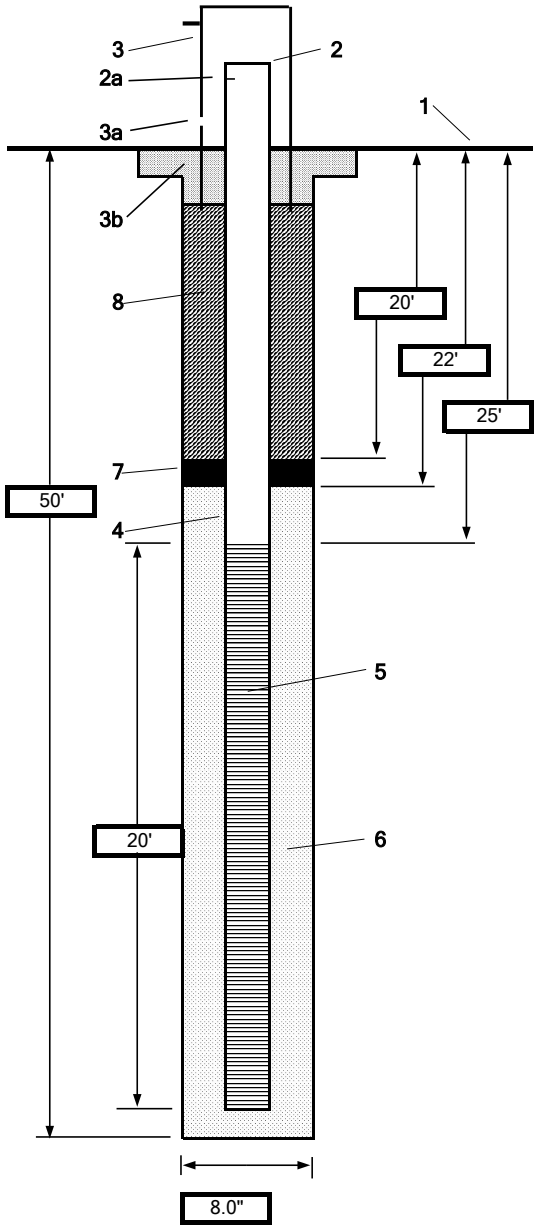
WELL COMPLETION DIAGRAM

PROJECT : APS former MGP Site LOCATION : Douglas, AZ

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD AND EQUIPMENT USED : Sonic 600 SC

WATER LEVELS : 29.22' START:11/4/2019:1300 END:11/4/2019:1515 LOGGER : Ilka Dinkleman



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Monument 8", 3' Stickup, 5 bags
a) weep hole?: No
b) concrete pad dimensions: 2'x2'

4- Dia./type of well casing: 4" schedule 40 pvc

5- Type/slot size of screen: 0.010

6- Type screen filter: 12/20 sand
a) Quantity used: 15 bags

7- Type of seal: 3/8" bentonite chips
a) Quantity used: 1 bag

8- Grout
a) Grout mix used: Quick gel, Portland
b) Method of placement: pour/tremmie
c) Vol. of well casing grout: 20 gallons

Development method: Surge and Purge

Development time: 11/5/2019 - 11/6/2019

Estimated purge volume: 210 gallons

Comments

PROJECT NUMBER	WELL NUMBER	
D3118600.A.CS.EV.DG.05-1B	D-MW27 (boring B-27)	SHEET 1 OF 1

JACOBS

WELL DEVELOPMENT LOG

PROJECT : **APS Douglas former MGP** LOCATION : **Douglas, AZ**

DEVELOPMENT CONTRACTOR **Cascade Drilling**

DEVELOPMENT METHOD AND EQUIPMENT USED : Smeal Hoist Development Rig

START WATER LEVELS : 29.22' START : 11/5/2019 1405 END : 11-6-19 900 LOGGER : **I. Dinkleman**

MAXIMUM DRAWDOWN DURING PUMPING: 7.87'

RANGE AND AVERAGE DISCHARGE RATE: 0.90-1.94 GPM

TOTAL QUANTITY OF WATER DISCHARGED: 215 Gal

DISPOSITION OF DISCHARGE WATER: slity to clear

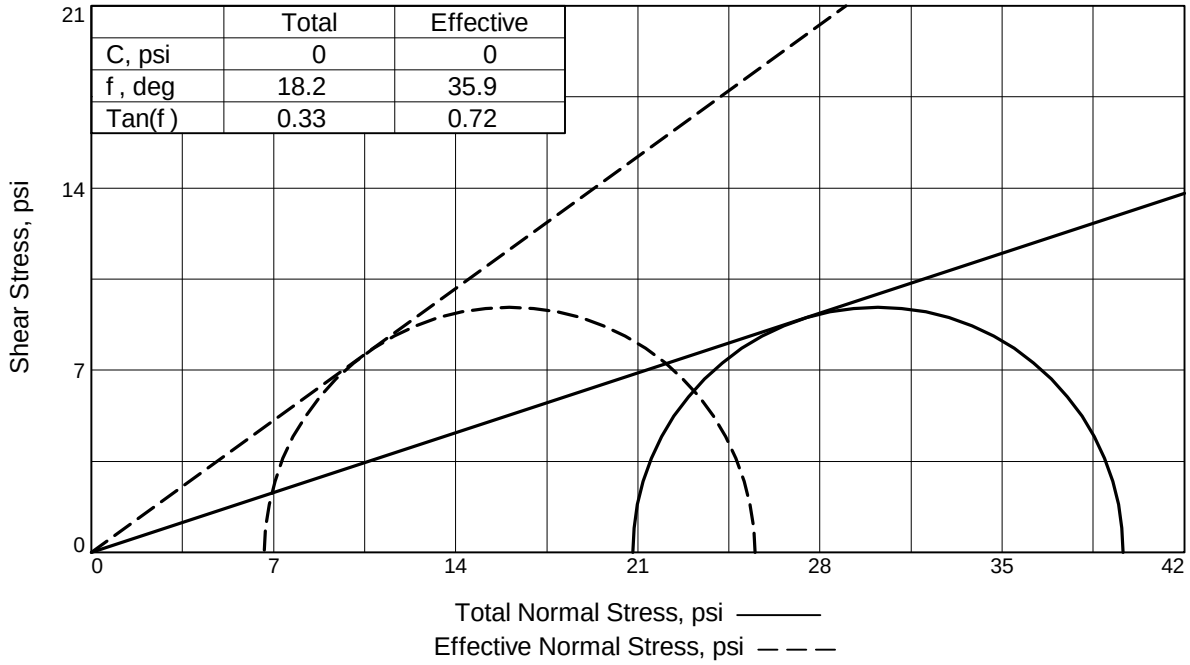
NR=not recordable, NTU too high

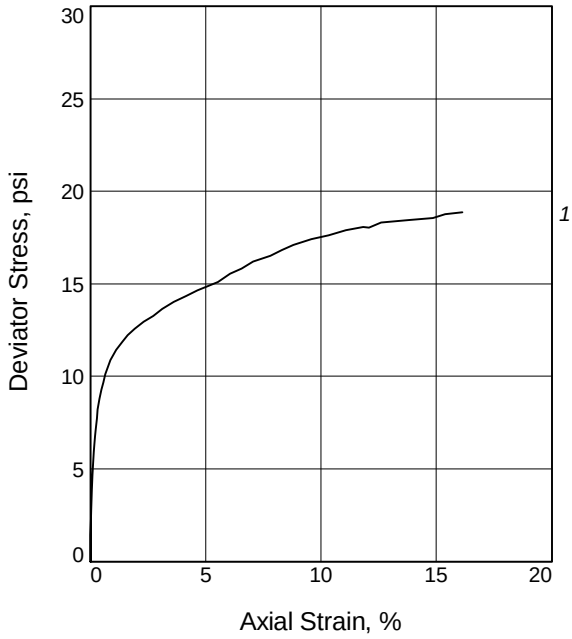
Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (ms/cm)	DO mg/L	ORP mV	(color, odor, sheen, sediment, etc.)
1600	36	32.77	NR	19.85	6.9	1948	2.52		turbid, silty
1610	49	32.77	134	18.78	6.98	1940	2.71		cloudy
1620	65	33.62	NR	18.62	7.02	1944	2.58		turbid
1630	74	33.85	404	18.33	7.03	1941	2.85		turbid
1640	90	33.92	143	18.31	7.01	1942	2.72		cloudy
1650	104	33.98	66.2	18.41	7	1941	2.75		cloudy
1700	121	34.18	26.1	18.13	7.01	1947	2.5	141.7	cloudy
1710	137	34.03	481	18.1	7.03	1941	2.82	130.5	turbid
1715	147	35.57	56.8	17.98	7.02	1943	2.82	126.4	cloudy
1720	154	35.91	NR	17.78	7.04	1941	2.63	123.3	turbid
1725	162	37.09	505	18.08	7.03	1940	3.07	120.3	turbid
1730	167	36.66	NR	18.03	7.06	1943	3.25	120.2	turbid
				11/6/2019					
810	175	31.09	160	16.62	6.73	1927	5.88	298.2	cloudy
820	181	31.95	180	17.65	6.96	1931	4.95	280.9	cloudy
830	187	31.9	87	17.86	6.96	1935	3.95	275	cloudy
840	193	32.24	36	17.89	6.96	1935	2.95	267.8	clear
850	204	32.26	18	18.01	6.95	1938	2.08	259.4	clear
855	210	32.27	6.8	18.13	6.96	1939	2.49	256.8	clear
900	214	32.27	3.6	17.89	6.96	1943	2.48	245.8	clear

Appendix F
Geotechnical Testing Laboratory Results

Terracon

	Total	Effective
C, psi	0	0
f , deg	18.2	35.9
Tan(f)	0.33	0.72





Sample No.		1
Initial	Water Content, %	6.5
	Dry Density, pcf	99.6
	Saturation, %	26.0
	Void Ratio	0.6623
	Diameter, in.	1.925
	Height, in.	3.880
At Test	Water Content, %	22.4
	Dry Density, pcf	103.9
	Saturation, %	100.0
	Void Ratio	0.5934
	Diameter, in.	1.891
	Height, in.	3.853
Strain rate, in./min.		0.017
Back Pressure, psi		55.0
Cell Pressure, psi		75.8
Fail. Stress, psi		18.8
Excess Pore Pr., psi		14.2
Ult. Stress, psi		
Excess Pore Pr., psi		
$\bar{s}_1$ Failure, psi		25.5
$\bar{s}_3$ Failure, psi		6.6

Type of Test:
CU with Pore Pressures
Sample Type: Brass Sleeve
Description: Clayey Sand

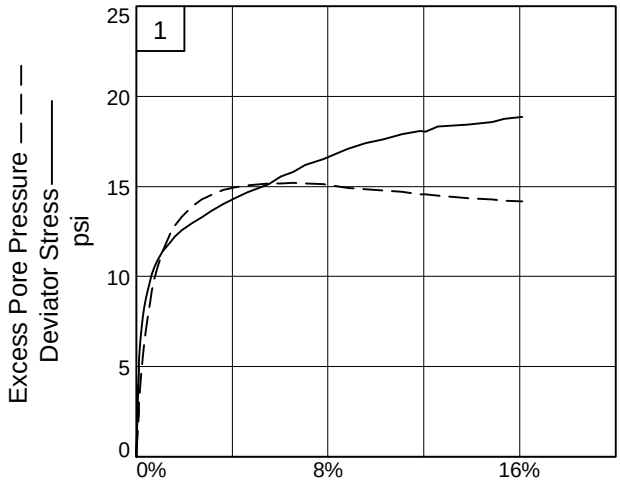
Assumed Specific Gravity= 2.651
Remarks: Single Point CU

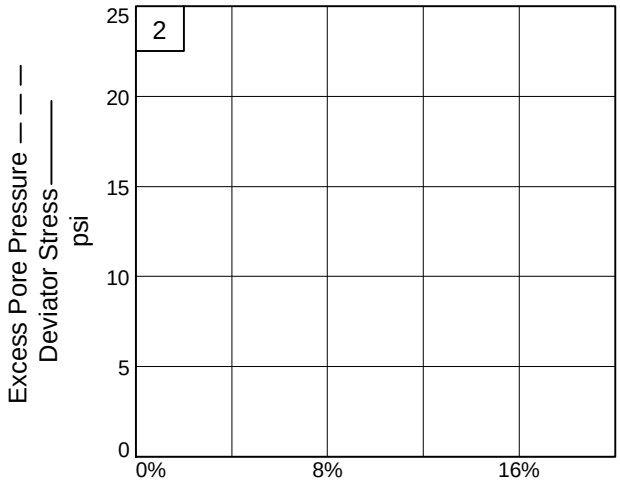
Client: Hoque and Associates

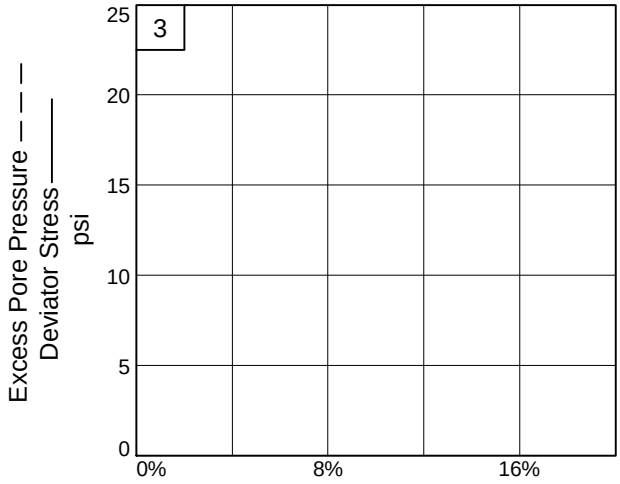
Project: APS Douglas Former MGP, HA PN 19107

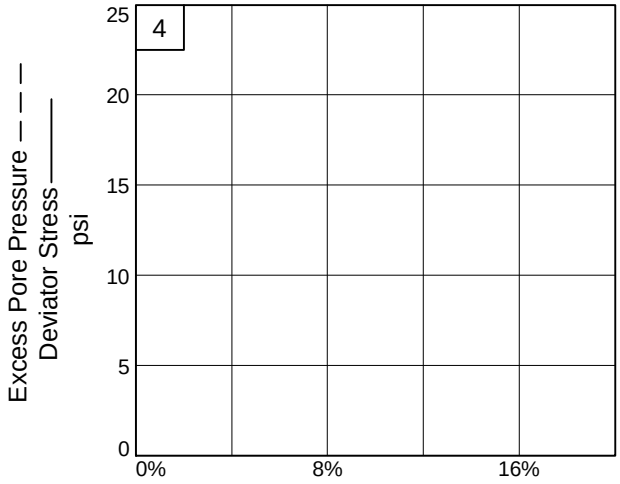
Source of Sample: B-11 **Depth:** 10.0-10.5 ft
Sample Number: N/A
Proj. No.: 65181094 **Date Sampled:** 11/18/19

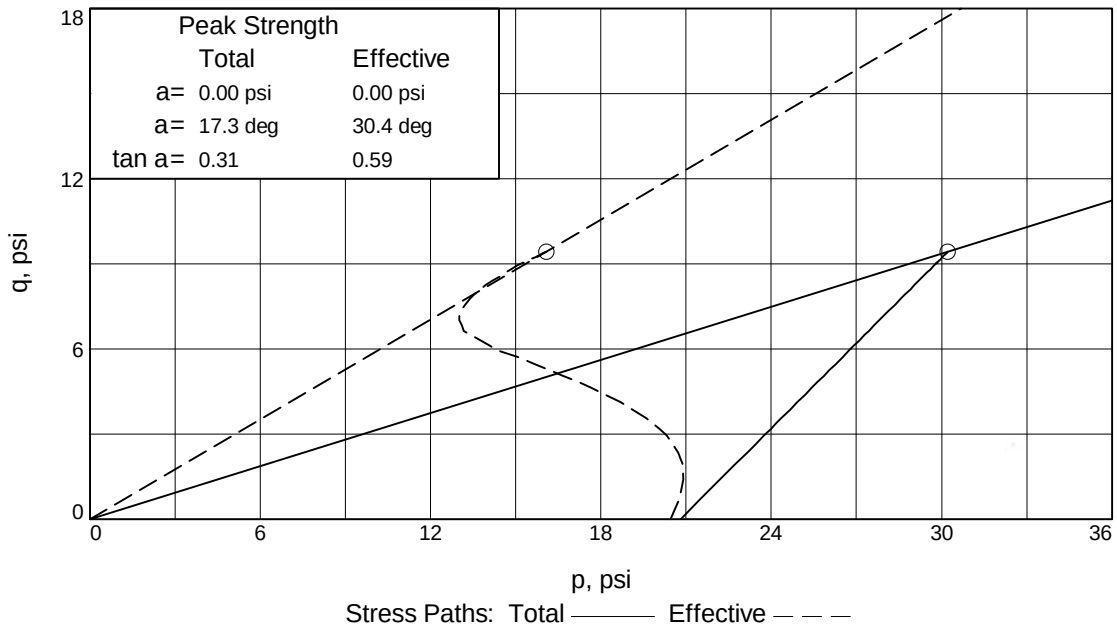
TRIAXIAL SHEAR TEST REPORT
Terracon Consultants, Inc.
Phoenix, AZ











Client: Hoque and Associates
Project: APS Douglas Former MGP, HA PN 19107
Source of Sample: B-11 **Depth:** 10.0-10.5 ft
Project No.: 65181094

Reviewed By:

Terracon Consultants, Inc.

HOQUE & ASSOCIATES

PROJECT:	APS Douglas former MGP	**CLIENT:**	Jacobs
LOCATION:	Douglas, AZ	**JOB NO:**	19107
MATERIAL:	See Below	**LAB NO:**	See Below
SAMPLE SOURCE	See Below	**DATE ASSIGNED:**	10/28/2019

MOISTURE CONTENT OF SOILS (ASTM D 2216)

LAB #	BORING & DEPTH	WET WGT. (GRAMS)	DRY WGT. (GRAMS)	MOISTURE CONTENT %
19L1043	B-34 @ 5-5.5'	118.0	104.0	13.5%
19L1044	B-33 @ 5-5.5'	159.0	131.0	21.4%
19L1045	B-32 @ 5-5.5'	171.0	143.0	19.6%
19L1046	B-31 @ 5-5.5'	126.0	113.0	11.5%
19L1047	B-35 @ 5-5.5'	129.0	117.0	10.3%
19L1048	B-14 @ 5-5.5'	205.0	189.0	8.5%
19L1049	B-22 @ 2.5-3.0'	184.0	172.0	7.0%
19L1050	B-28 @ 5-5.5'	158.0	147.0	7.5%
19L1051	B-14 @ 10-10.5'	169.0	153.0	10.5%
19L1052	B-22 @ 5-5.5'	246.0	229.0	7.4%
19L1053	B-22 @ 10-10.5'	218.0	206.0	5.8%
19L1054	B-11 @ 5-5.5'	270.0	245.0	10.2%
19L1055	B-11 @ 10-10.5'	195.0	180.0	8.3%
19L1056	B-24 @ 5-5.5'	167.0	147.0	13.6%
19L1057	B-24 @ 19.5-20.0'	269.0	238.0	13.0%
19L1058	B-13 @ 2.5-3.0'	232.0	214.0	8.4%
19L1059	B-25 @ 5-5.5'	395.0	365.0	8.2%
19L1061	B-12 @ 7.5-8.0'	203.0	184.0	10.3%
19L1062	B-12 @ 15.15.5'	206.0	188.0	9.6%
19L1063	B-25 @ 10-10.5'	211.0	199.0	6.0%
19L1064	B-25 @ 20-20.5'	284.0	265.0	7.2%
19L1066	B-25 @ 40-40.5'	626.0	450.0	39.1%
19L1067	B-30 @ 10-10.5'	251.0	224.0	12.1%
19L1068	B-30 @ 15-15.5'	242.0	218.0	11.0%
19L1069	B-30 @ 19.5-20.0'	282.0	251.0	12.4%
19L1070	B-21 @ 5-5.5'	192.0	176.0	9.1%

Reviewed By

Trent Titchenal
Lab Manager

HOQUE & ASSOCIATES

PROJECT:	APS Douglas former MGP	**CLIENT:**	Jacobs
LOCATION:	Douglas, AZ	**JOB NO:**	19107
MATERIAL:	See Below	**LAB NO:**	See Below
SAMPLE SOURCE	See Below	**DATE ASSIGNED:**	10/28/2019

MOISTURE CONTENT OF SOILS (ASTM D 2216)

LAB #	BORING & DEPTH	WET WGT. (GRAMS)	DRY WGT. (GRAMS)	MOISTURE CONTENT %
19L1071	B-21 @ 19.5-20.0'	169.0	156.0	8.3%
19L1072	B-15 @ 7.5-8.0'	225.0	214.0	5.1%
19L1073	B-19 @ 2.5-3.0'	223.0	205.0	8.8%
19L1074	B-19 @ 7.5-8.0'	230.0	207.0	11.1%
19L1075	B-26 @ 5-5.5'	160.0	148.0	8.1%
19L1078	B-26 @ 15-15.5'	245.0	231.0	6.1%
19L1079	B-26 @ 20.0-20.5'	218.0	206.0	5.8%
19L1080	B-26 @ 30.0-30.5'	250.0	203.0	23.2%
19L1081	B-27 @ 7.5-8.0'	251.0	221.0	13.6%
19L1083	B-27 @ 15-15.5'	219.0	194.0	12.9%
19L1085	B-35 @ 10-10.5'	284.0	258.0	10.1%
19L1086	B-35 @ 20-20.5'	268.0	236.0	13.6%
19L1087	B-34 @ 10-10.5'	271.0	250.0	8.4%
19L1088	B-34 @ 15-15.5'	371.0	343.0	8.2%
19L1089	B-29 @ 5-5.5'	313.0	299.0	4.7%
19L1090	B-29 @ 10-10.5'	228.0	209.0	9.1%
19L1091	B-29 @ 15-15.5'	210.0	190.0	10.5%

Reviewed By

Trent Titchenal
Lab Manager

HOQUE & ASSOCIATES

PROJECT: APS Douglas former MGP (D3118600.A.CS.EV.DG.05-1B)
LOCATION: Douglas, AZ
MATERIAL: Borings
SAMPLE SOURCE: SEE BORING

CLIENT: Jacobs
JOB NO: 19107
LAB NO: SEE BELOW
DATE ASSIGNED: 10/28/19

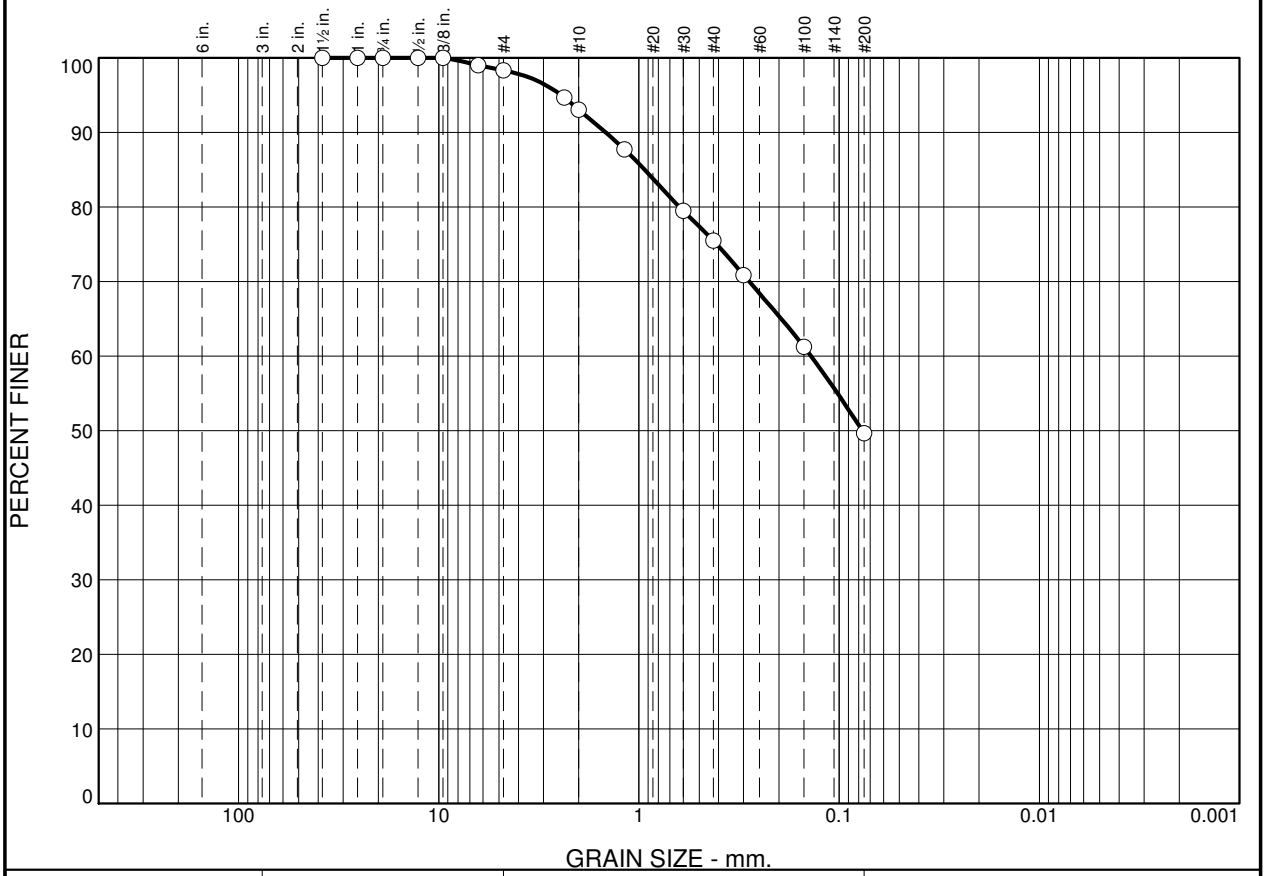
DENSITY OF ROCK CORE USING VOLUMETRIC CALCULATIONS

LAB #	BORING	MOISTURE			DIA.	HGT.	WET WEIGHT & RINGS	WEIGHT OF RINGS	DRY DENSITY
		WET WT. (g)	DRY WT. (g)	MOISTURE CONTENT	(cm)	(cm)	(g)	(g)	(pcf)
19L1048	B-14 @ 5-5.5'	371.0	347.0	6.9%	4.9	12.6	547.9	176.9	91.1
19L1051	B-14 @ 10-10.5'	270.0	240.0	12.5%	4.9	12.1	434.3	164.2	65.4
19L1054	B-14 @ 5-5.5'	270.0	245.0	10.2%	4.9	14.7	645.9	163.6	98.6
19L1056	B-24 @ 5-5.5'	167.0	147.0	13.6%	4.9	11.4	524.8	163.8	92.3
19L1057	B-24 @ 19.5-2.'	506.0	458.0	10.5%	4.9	15.2	670.1	163.9	99.9
19L1059	B-25 @ 5-5.5'	238.0	217.0	9.7%	4.9	9.3	402.0	164.1	77.2
19L1061	B-12 @ 7.5-8'	203.0	184.0	10.3%	4.9	13.9	604.8	163.8	95.0
19L1062	B-12 @ 15-15.5'	371.7	353.3	5.2%	4.9	11.9	535.9	163.7	98.6
19L1063	B-25 @ 10-10.5'	515.3	470.7	9.5%	4.9	14.4	679.0	163.5	108.1
19L1064	B-25 @ 20-20.5'	529.9	479.1	10.6%	4.9	15.2	692.4	163.5	104.3
19L1066	B-25 @ 40-40.5'	537.4	382.9	40.3%	4.9	15.2	684.0	163.6	80.9
19L1070	B-21 @ 5-5.5'	455.5	420.8	8.2%	4.9	14.0	617.9	163.5	98.7
19L1071	B-21 @ 19.5-20'	169.0	156.0	8.3%	4.9	12.6	555.6	165.5	94.8
19L1072	B-15 @ 7.5-8.0'	225.0	214.0	5.1%	4.9	15.1	654.6	164.8	101.6
19L1074	B-19 @ 7.5-8.0	230.0	207.0	11.1%	4.9	15.1	655.0	163.8	96.6
19L1075	B-26 @ 5-5.5'	160.1	148.0	8.2%	4.9	10.8	474.8	163.4	88.2
19L1078	B-26 @ 15-15.5'	245.0	231.0	6.1%	4.9	15.2	636.5	164.2	97.1
19L1079	B-26 @ 20.0-20.5'	218.0	206.0	5.8%	4.9	15.2	667.5	164.6	103.6
19L1080	B-26 @ 30.0-30.5'	250.0	203.0	23.2%	4.9	15.1	662.1	165.3	88.2
19L1081	B-27 @ 7.5-8.0'	251.0	227.0	10.6%	4.9	13.6	645.8	163.9	106.2
19L1083	B-27 @ 15-15.5'	219.0	194.0	12.9%	4.9	15.2	694.2	165.2	102.2

REVIEWED BY

Trent Titchenal
Lab Manager

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	5	18	25	50	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2"	100		
1"	100		
3/4"	100		
1/2"	100		
3/8"	100		
1/4"	99		
#4	98		
#8	95		
#10	93		
#16	88		
#30	79		
#40	75		
#50	71		
#100	61		
#200	50		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 16 LL= 30 PI= 14

Coefficients

D_{90}= 1.4660 D_{85}= 0.9360 D_{60}= 0.1382
D_{50}= 0.0764 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(4)

Remarks

Location: B-34
Sample Number: 19L1043 **Depth:** 5-5.5' **Date:** 10-28-19

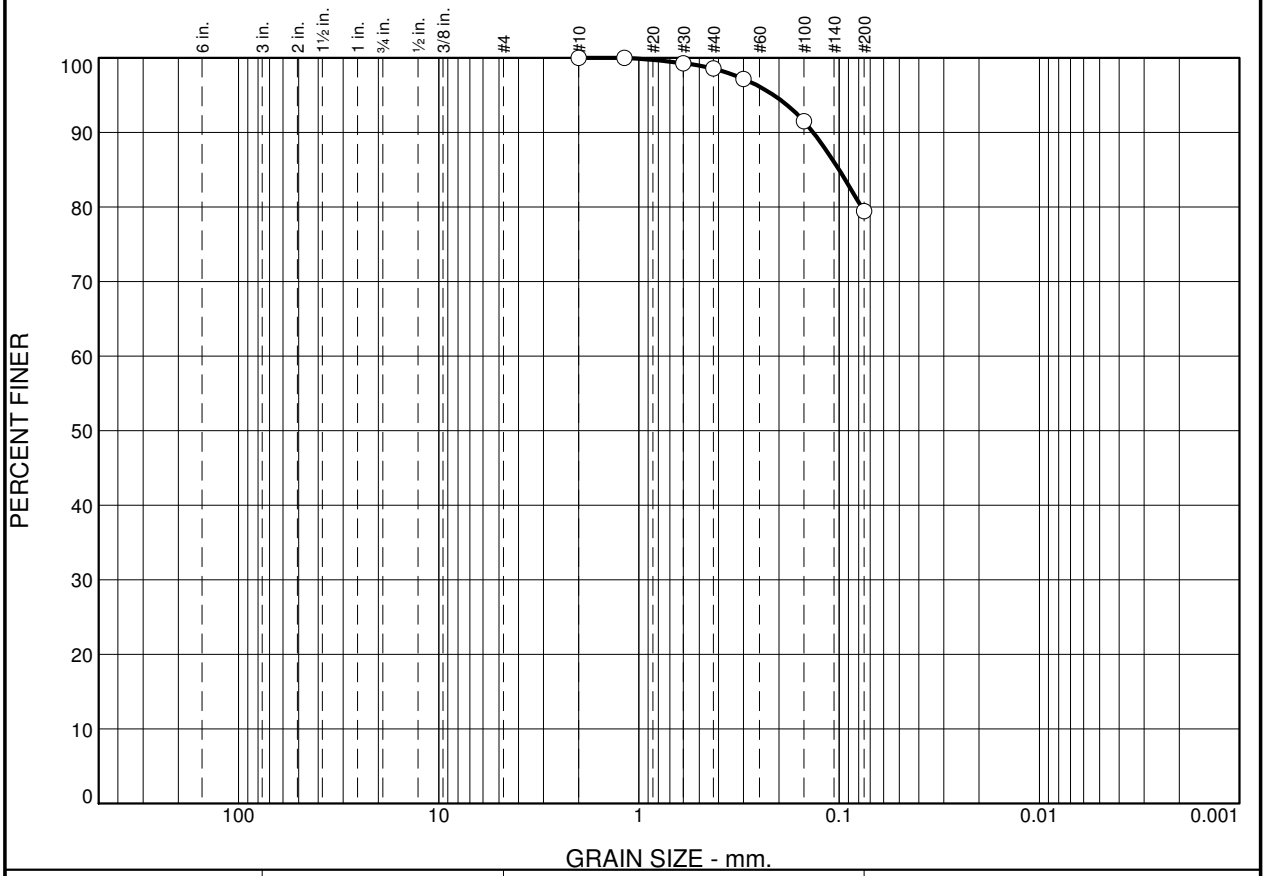
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1034

Tested By: TR **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	1	20	79	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100		
#16	100		
#30	99		
#40	99		
#50	97		
#100	91		
#200	79		

* (no specification provided)

Soil Description

lean clay with sand

Atterberg Limits

PL= 21 LL= 45 PI= 24

Coefficients

D_{90}= 0.1349 D_{85}= 0.1002 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(19)

Remarks

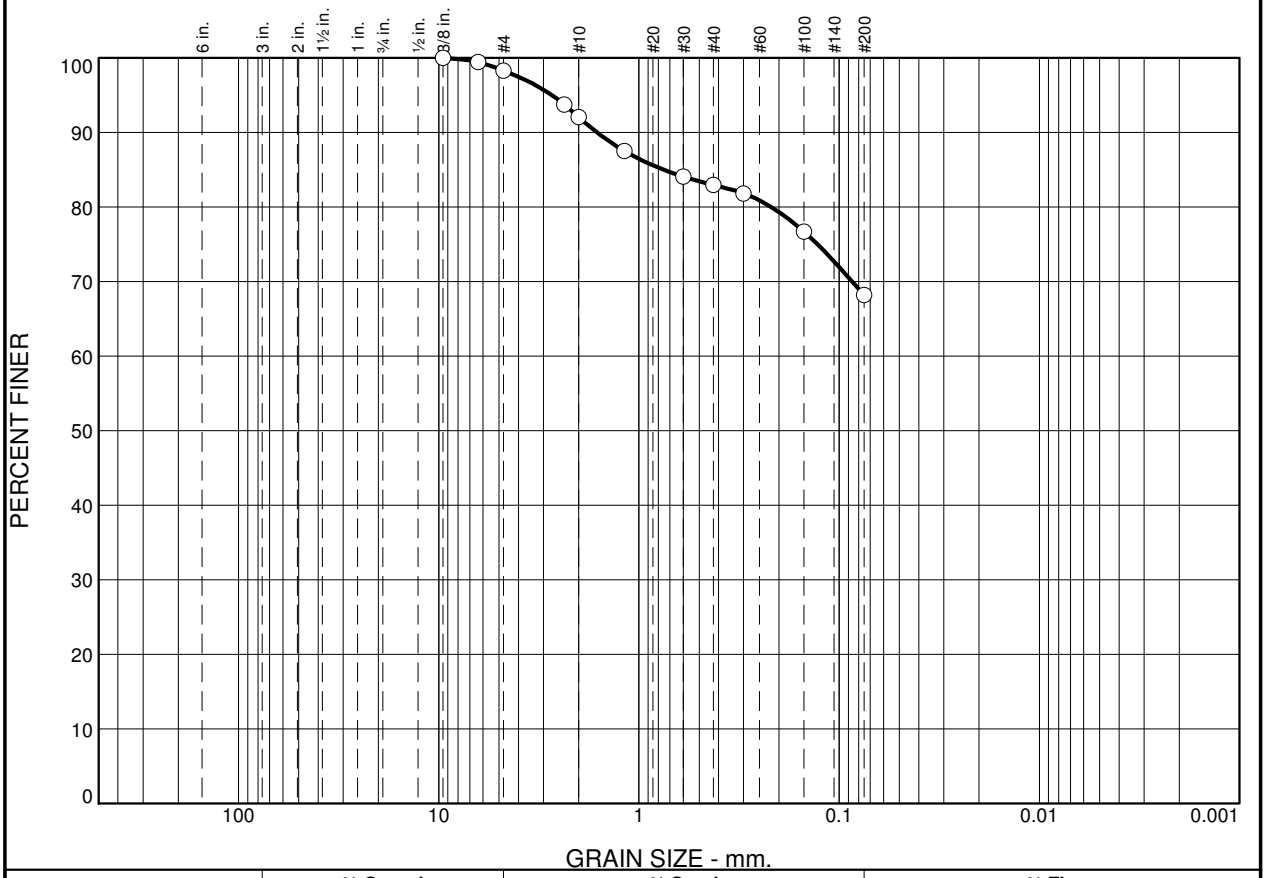
Location: B-33
Sample Number: 19L1044 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1044

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	6	9	15	68	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100		
1/4"	99		
#4	98		
#8	94		
#10	92		
#16	88		
#30	84		
#40	83		
#50	82		
#100	77		
#200	68		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 20 LL= 44 PI= 24

Coefficients

D_{90}= 1.6177 D_{85}= 0.7515 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(15)

Remarks

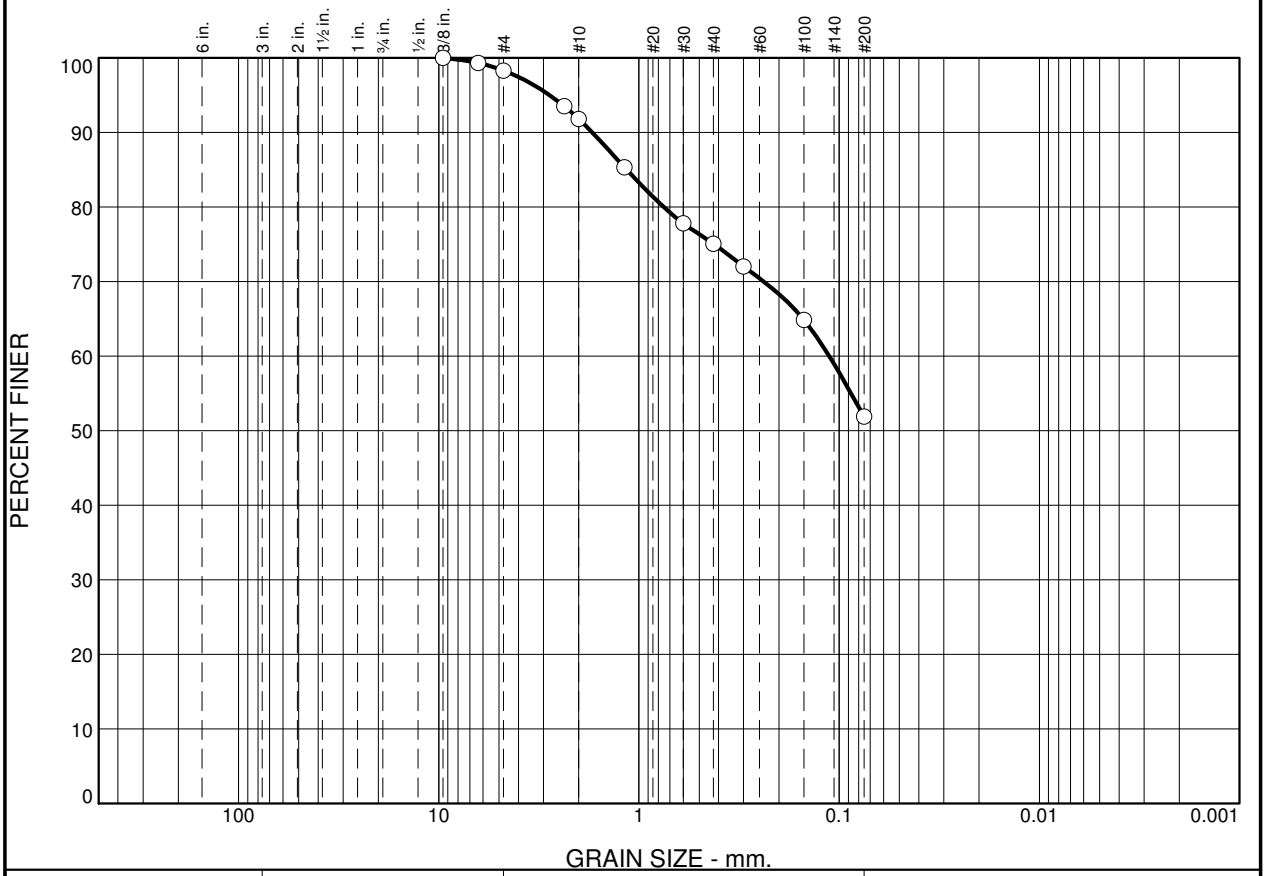
Location: B-32
Sample Number: 19L1045 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1045

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	6	17	23	52	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100		
1/4"	99		
#4	98		
#8	94		
#10	92		
#16	85		
#30	78		
#40	75		
#50	72		
#100	65		
#200	52		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 19 LL= 41 PI= 22

Coefficients

D_{90}= 1.7107 D_{85}= 1.1501 D_{60}= 0.1122
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(8)

Remarks

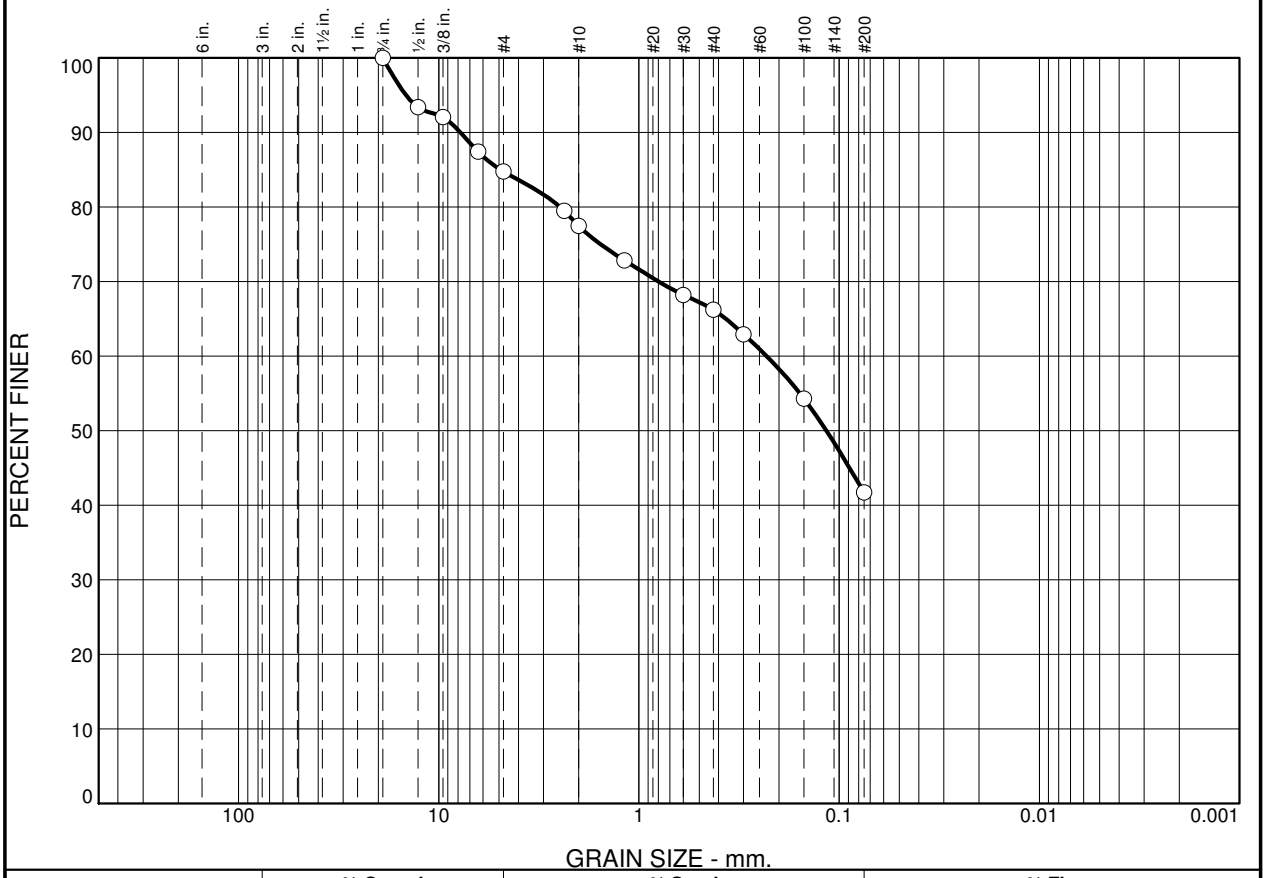
Location: B-31
Sample Number: 19L1046 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1046

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	15	8	11	24	42	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	93		
3/8"	92		
1/4"	87		
#4	85		
#8	79		
#10	77		
#16	73		
#30	68		
#40	66		
#50	63		
#100	54		
#200	42		

* (no specification provided)

Soil Description

clayey sand with gravel

Atterberg Limits

PL= 17 LL= 45 PI= 28

Coefficients

D_{90}= 7.7733 D_{85}= 4.9022 D_{60}= 0.2305
D_{50}= 0.1160 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-7-6(6)

Remarks

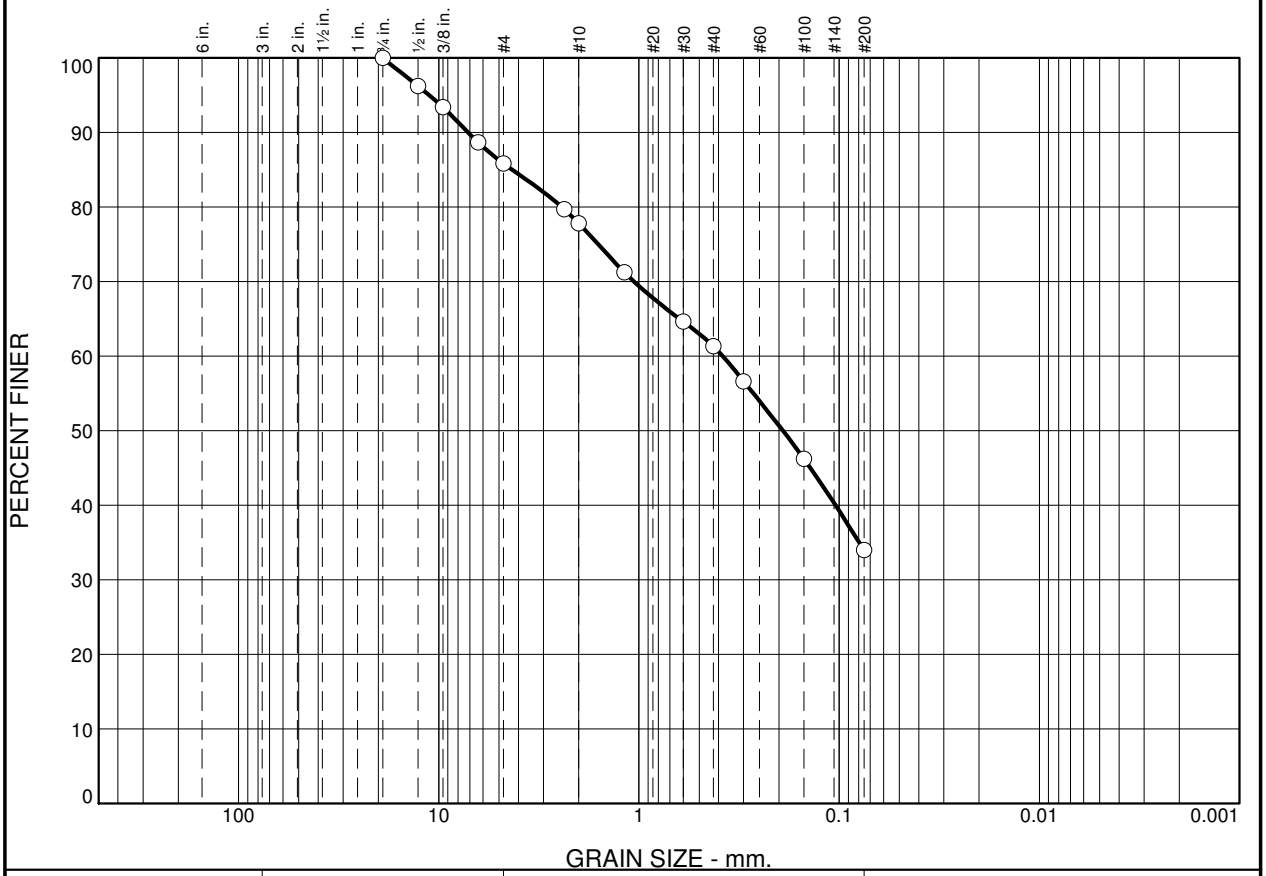
Location: B-35
Sample Number: 19L1047 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1047

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	14	8	17	27	34	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	96		
3/8"	93		
1/4"	89		
#4	86		
#8	80		
#10	78		
#16	71		
#30	65		
#40	61		
#50	57		
#100	46		
#200	34		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 24 LL= 58 PI= 34

Coefficients

D_{90}= 7.1259 D_{85}= 4.2998 D_{60}= 0.3820
D_{50}= 0.1909 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-7(5)

Remarks

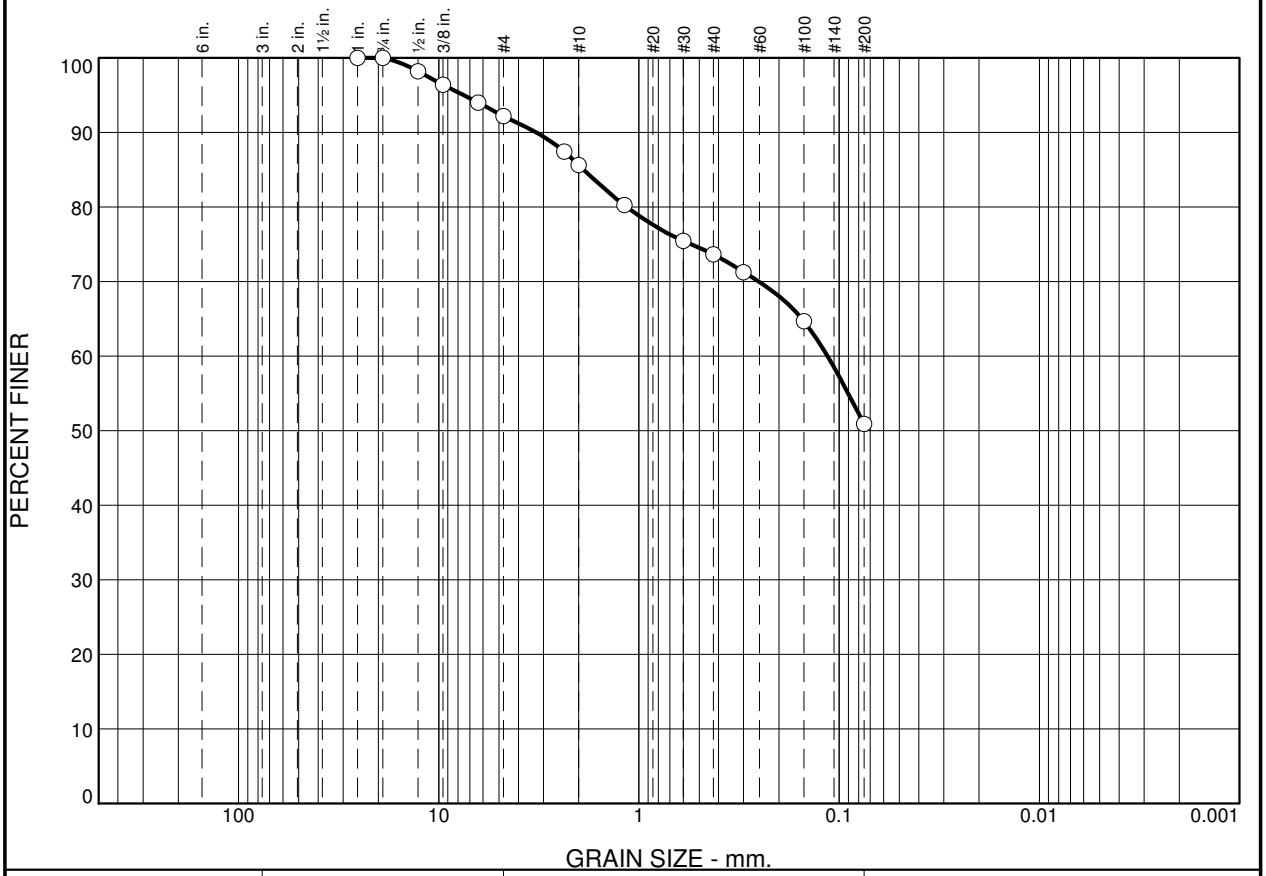
Location: B-14
Sample Number: 19L1048 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1048

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	8	6	12	23	51	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	100		
1/2"	98		
3/8"	96		
1/4"	94		
#4	92		
#8	87		
#10	86		
#16	80		
#30	75		
#40	74		
#50	71		
#100	65		
#200	51		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 17 LL= 38 PI= 21

Coefficients

D_{90}= 3.2549 D_{85}= 1.8897 D_{60}= 0.1145
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(7)

Remarks

Location: B-22
Sample Number: 19L1049 **Depth:** 2.5-3.0' **Date:** 10-28-19

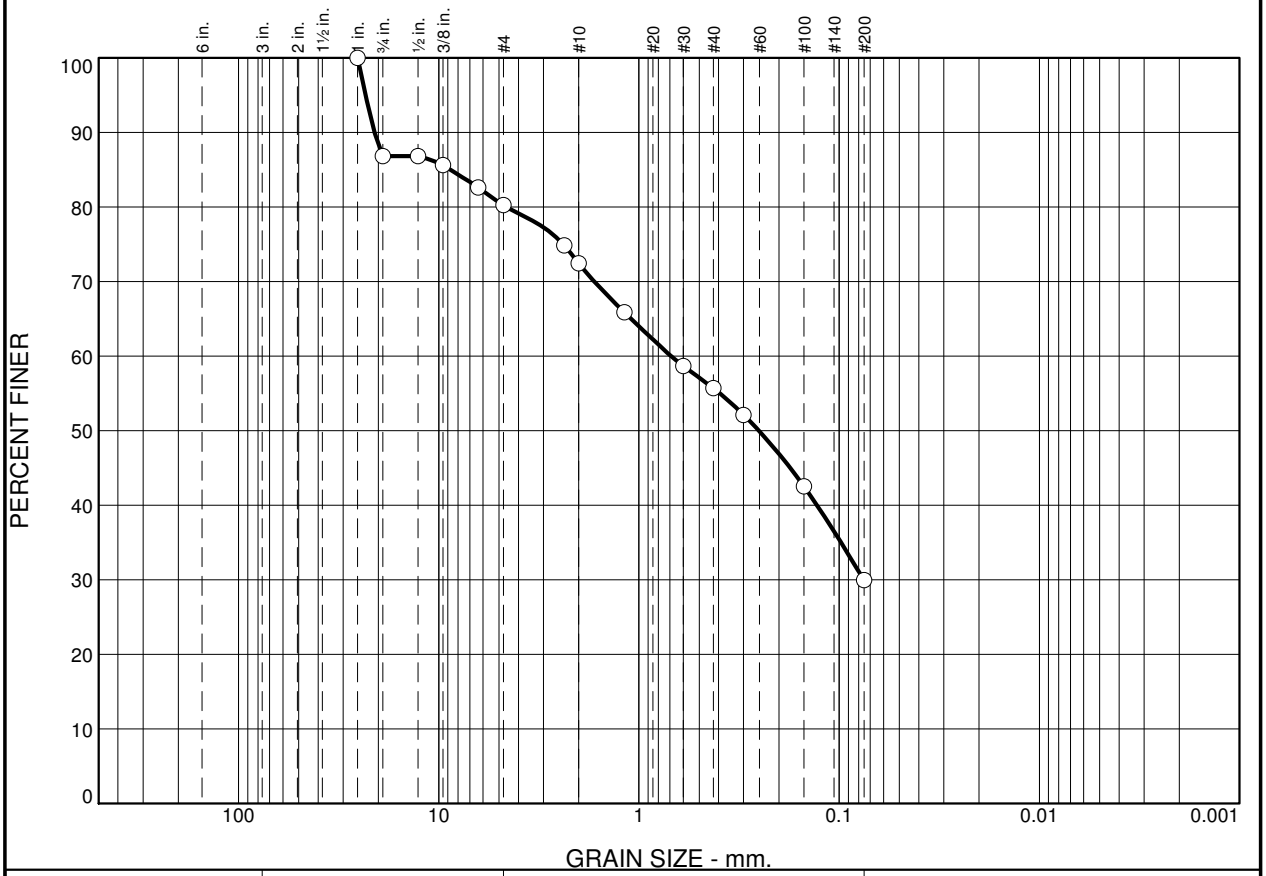
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1049

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	13	7	8	16	26	30	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	87		
1/2"	87		
3/8"	86		
1/4"	83		
#4	80		
#8	75		
#10	72		
#16	66		
#30	59		
#40	56		
#50	52		
#100	43		
#200	30		

* (no specification provided)

Soil Description

clayey sand with gravel

Atterberg Limits

PL= 16 LL= 37 PI= 21

Coefficients

D_{90}= 20.9280 D_{85}= 8.7515 D_{60}= 0.6892
D_{50}= 0.2520 D_{30}= 0.0752 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

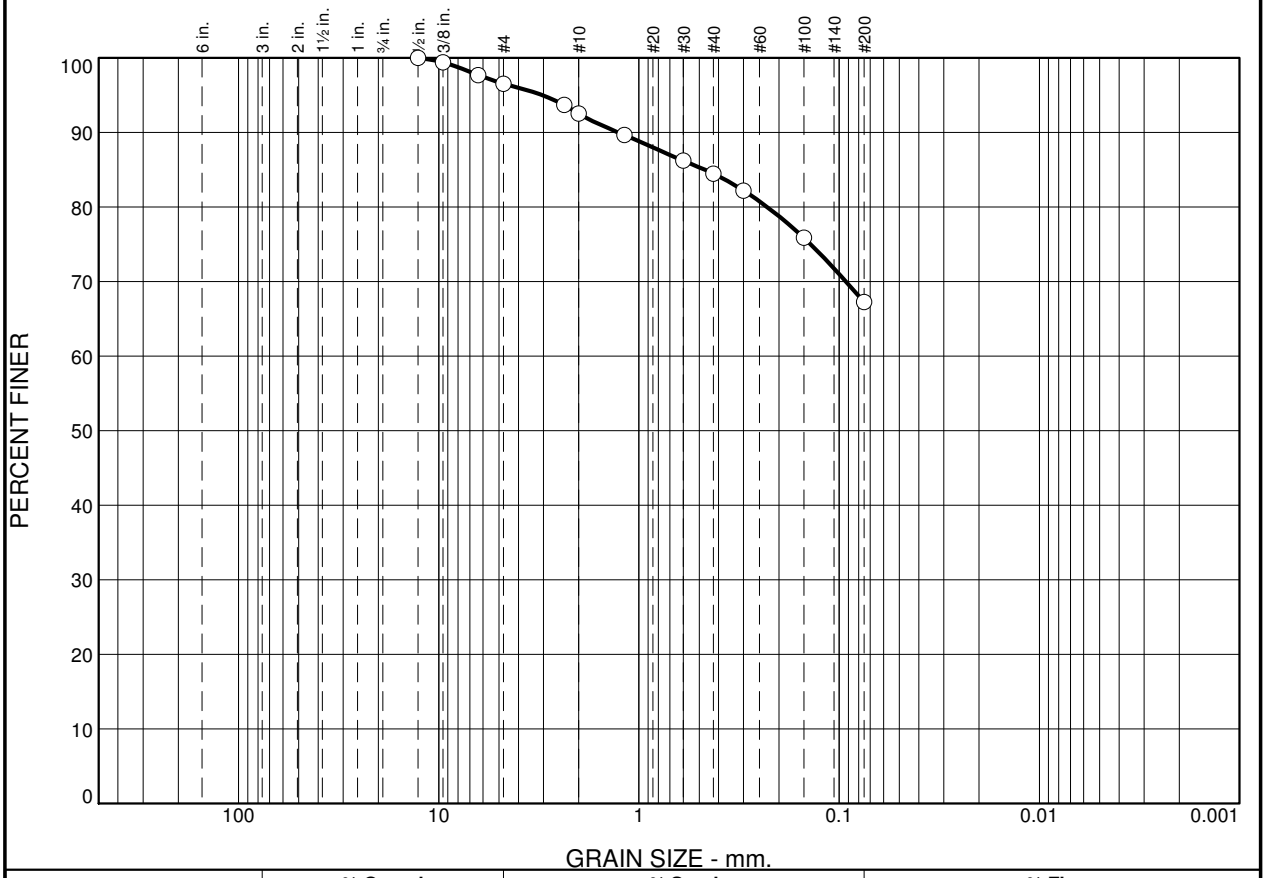
Location: B-28
Sample Number: 19L1050 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1050

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	3	4	9	17	67	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	99		
1/4"	98		
#4	97		
#8	94		
#10	93		
#16	90		
#30	86		
#40	84		
#50	82		
#100	76		
#200	67		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 19 LL= 42 PI= 23

Coefficients

D_{90}= 1.2655 D_{85}= 0.4681 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(13)

Remarks

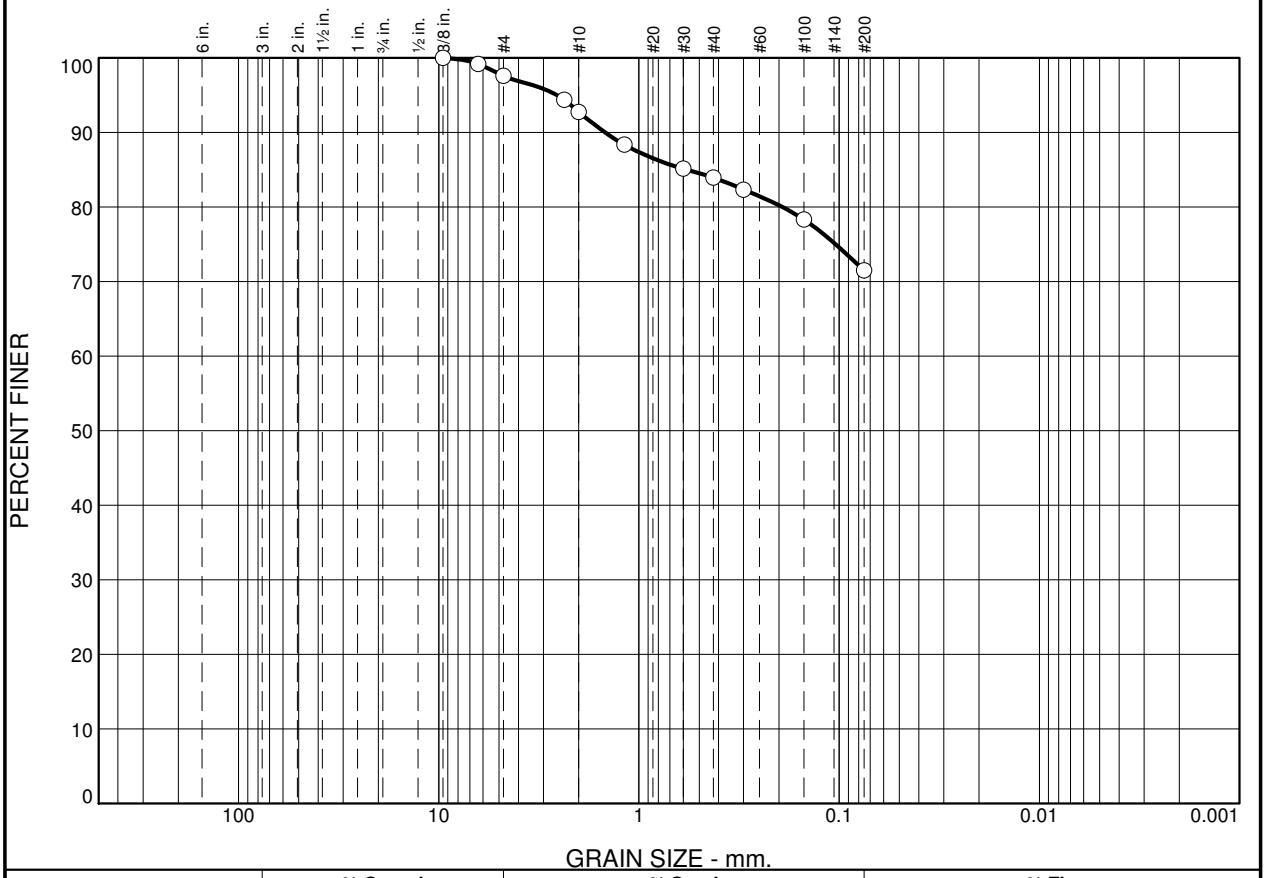
Location: B-14
Sample Number: 19L1051 **Depth:** 10-10.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1051

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	5	9	13	71	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100		
1/4"	99		
#4	98		
#8	94		
#10	93		
#16	88		
#30	85		
#40	84		
#50	82		
#100	78		
#200	71		

* (no specification provided)

Soil Description

lean clay with sand

Atterberg Limits

PL= 16 LL= 43 PI= 27

Coefficients

D_{90}= 1.4751 D_{85}= 0.5757 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(17)

Remarks

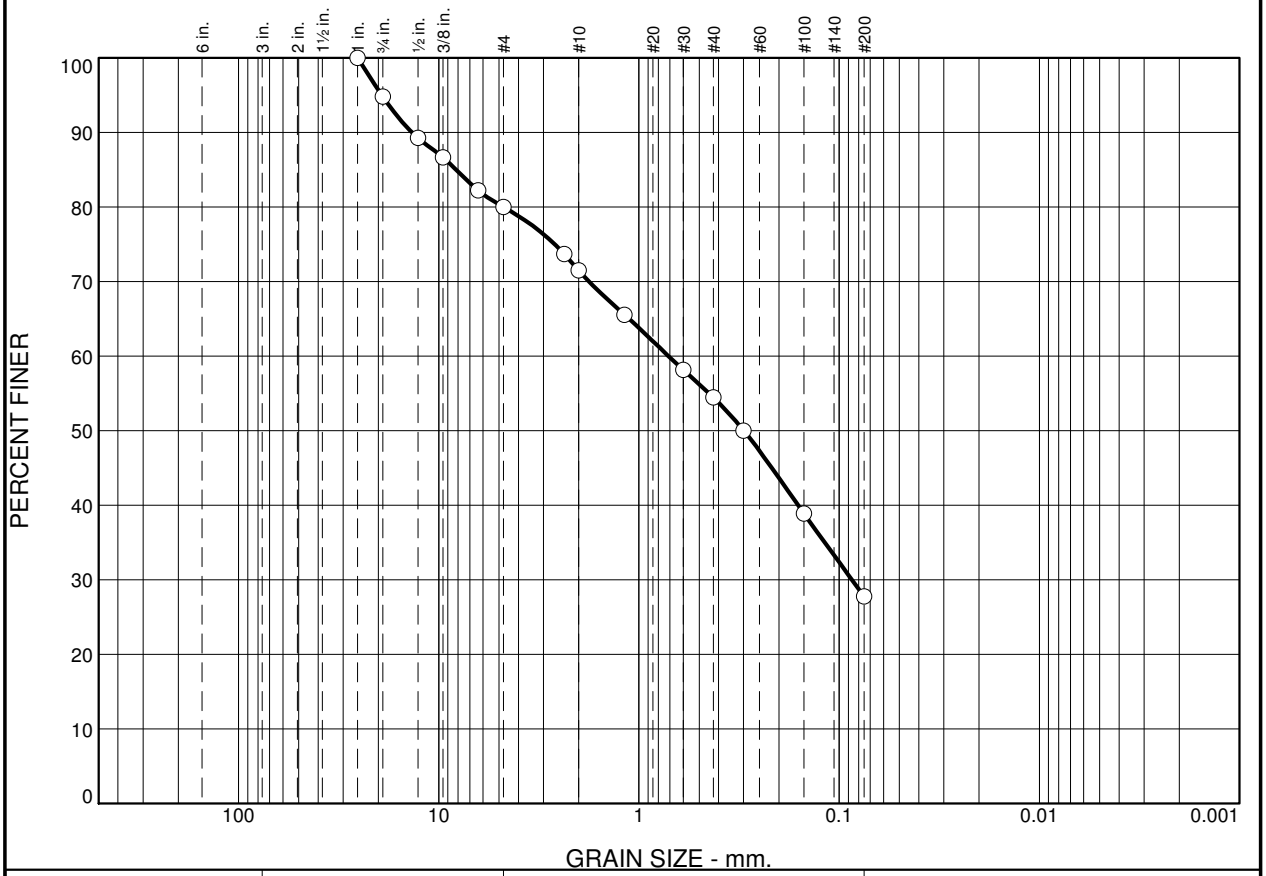
Location: B-22
Sample Number: 19L1052 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1052

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	5	15	9	17	26	28	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	95		
1/2"	89		
3/8"	87		
1/4"	82		
#4	80		
#8	74		
#10	71		
#16	66		
#30	58		
#40	54		
#50	50		
#100	39		
#200	28		

* (no specification provided)

Soil Description

clayey sand with gravel

Atterberg Limits

PL= 16 LL= 32 PI= 16

Coefficients

D_{90}= 13.6043 D_{85}= 8.1693 D_{60}= 0.7118
D_{50}= 0.3000 D_{30}= 0.0863 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: B-22
Sample Number: 19L1053 **Depth:** 10-10.5' **Date:** 10-28-19

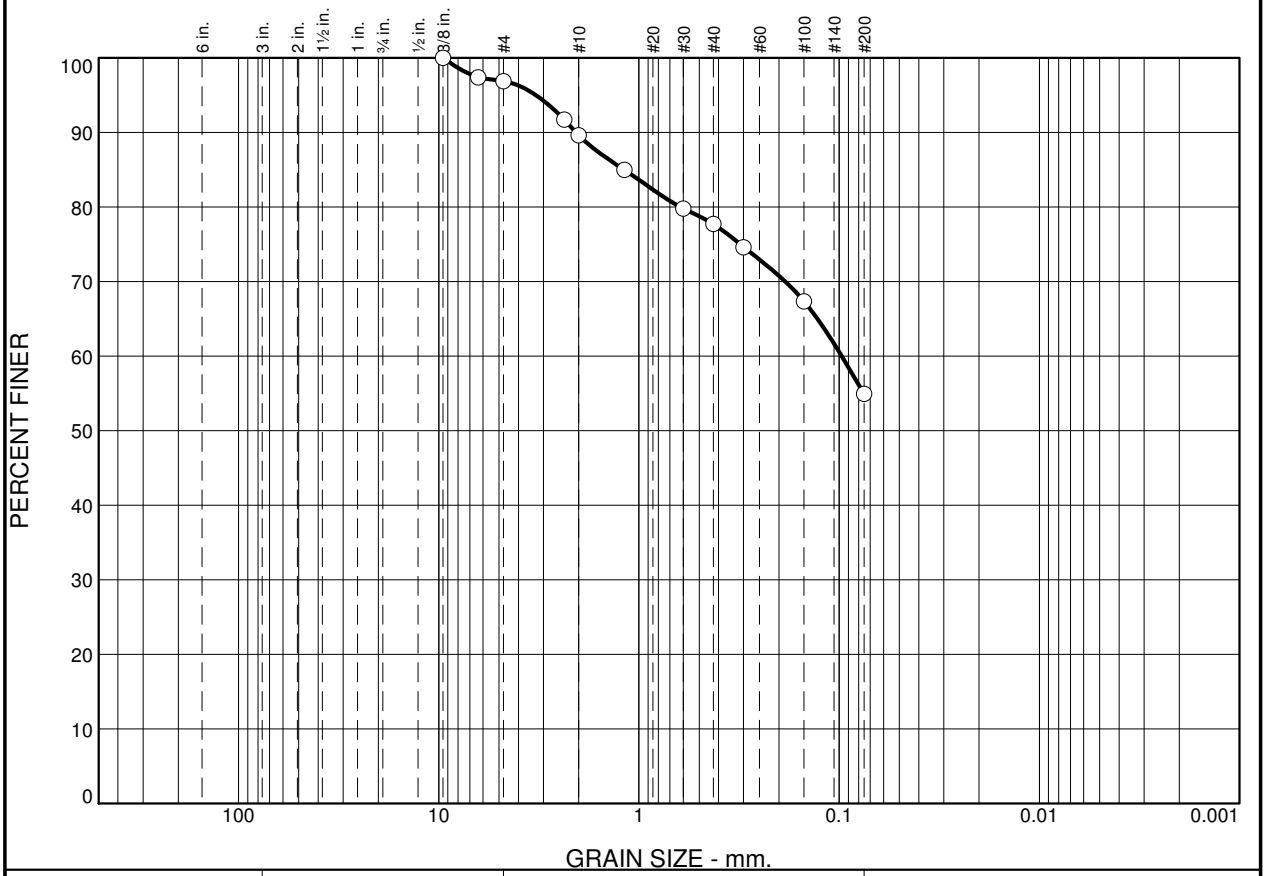
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1053

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	3	7	12	23	55	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100		
1/4"	97		
#4	97		
#8	92		
#10	90		
#16	85		
#30	80		
#40	78		
#50	75		
#100	67		
#200	55		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 15 LL= 39 PI= 24

Coefficients

D_{90}= 2.0609 D_{85}= 1.1839 D_{60}= 0.0971
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(10)

Remarks

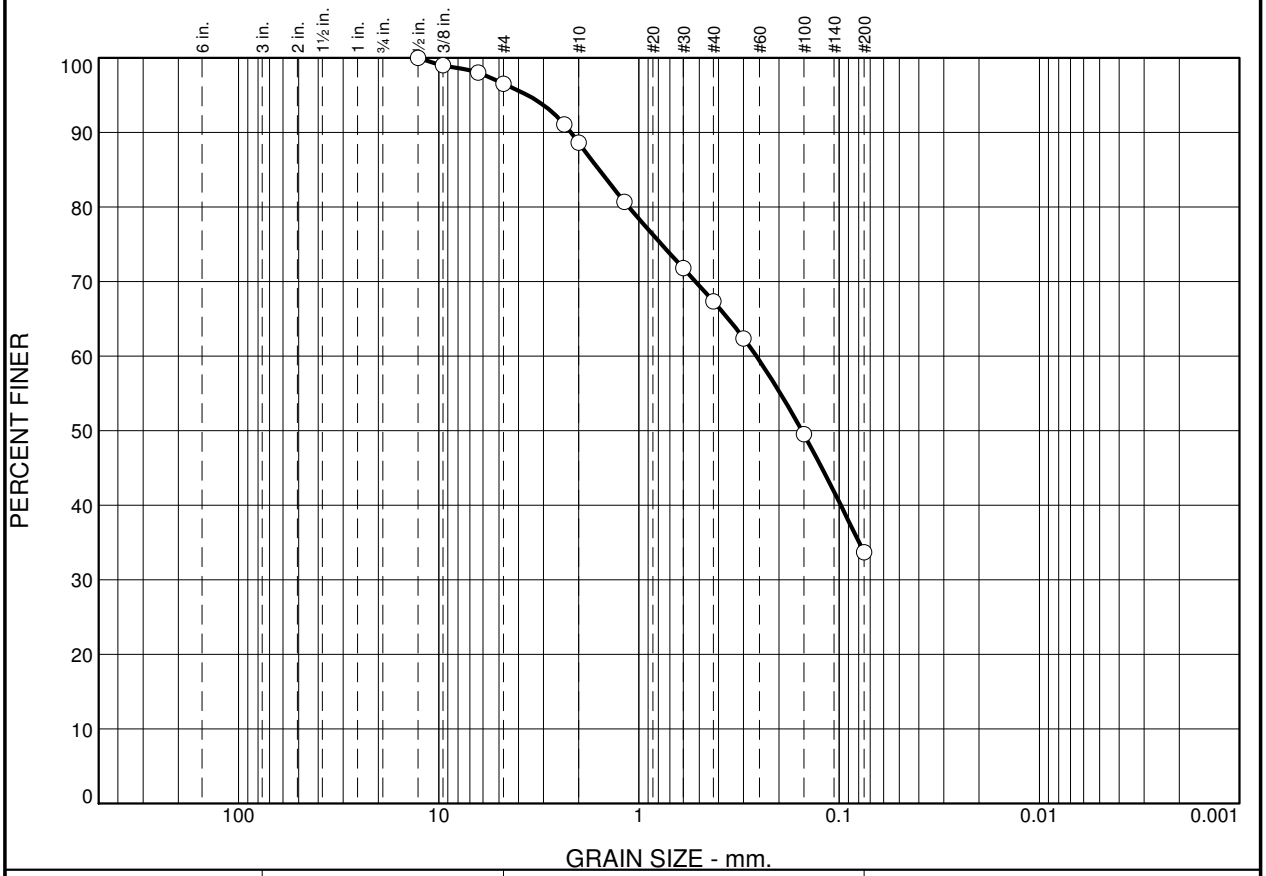
Location: B-11
Sample Number: 19L1054 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1054

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	3	8	22	33	34	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	99		
1/4"	98		
#4	97		
#8	91		
#10	89		
#16	81		
#30	72		
#40	67		
#50	62		
#100	50		
#200	34		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 15 LL= 31 PI= 16

Coefficients

D_{90}= 2.1878 D_{85}= 1.5820 D_{60}= 0.2591
D_{50}= 0.1535 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

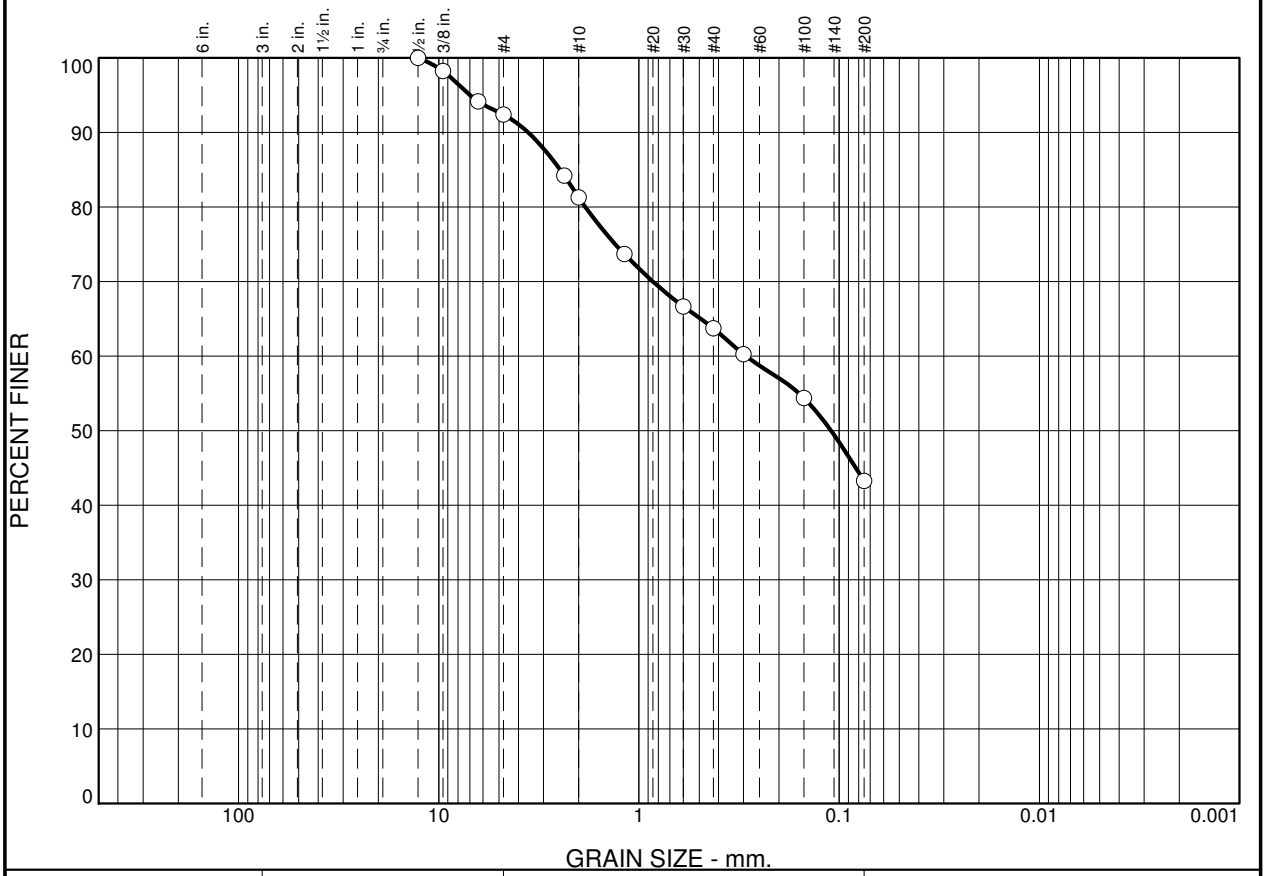
Location: B-11
Sample Number: 19L1055 **Depth:** 10-10.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1055

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	8	11	17	21	43	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	98		
1/4"	94		
#4	92		
#8	84		
#10	81		
#16	74		
#30	67		
#40	64		
#50	60		
#100	54		
#200	43		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 18 LL= 44 PI= 26

Coefficients

D_{90}= 3.5756 D_{85}= 2.4734 D_{60}= 0.2923
D_{50}= 0.1099 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-7-6(6)

Remarks

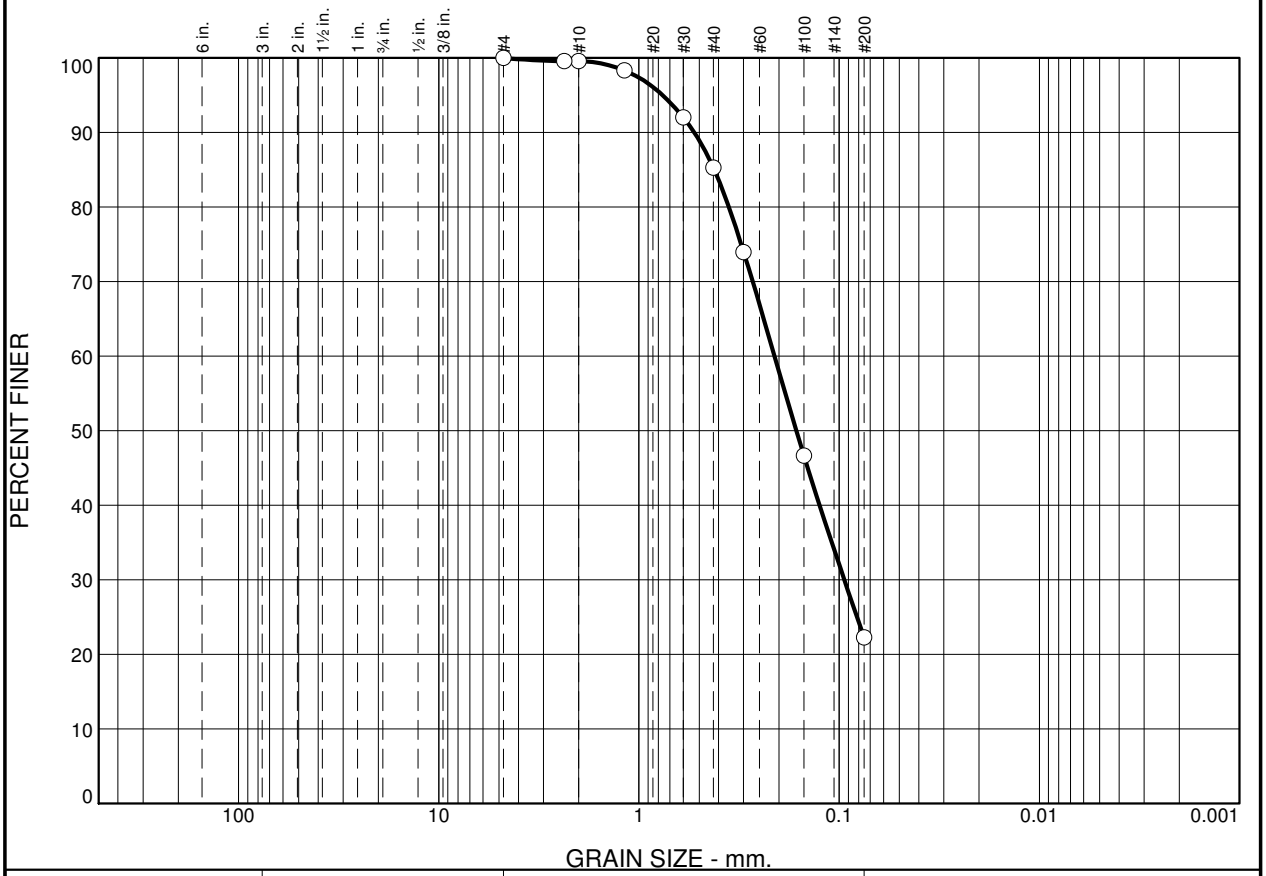
Location: B-24
Sample Number: 19L1056 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1056

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	15	63	22	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100		
#8	100		
#10	100		
#16	98		
#30	92		
#40	85		
#50	74		
#100	47		
#200	22		

* (no specification provided)

Soil Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.5290 D_{85}= 0.4203 D_{60}= 0.2101
D_{50}= 0.1636 D_{30}= 0.0943 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Location: B-24
Sample Number: 19L1057 **Depth:** 19.5-20.0' **Date:** 10-28-19

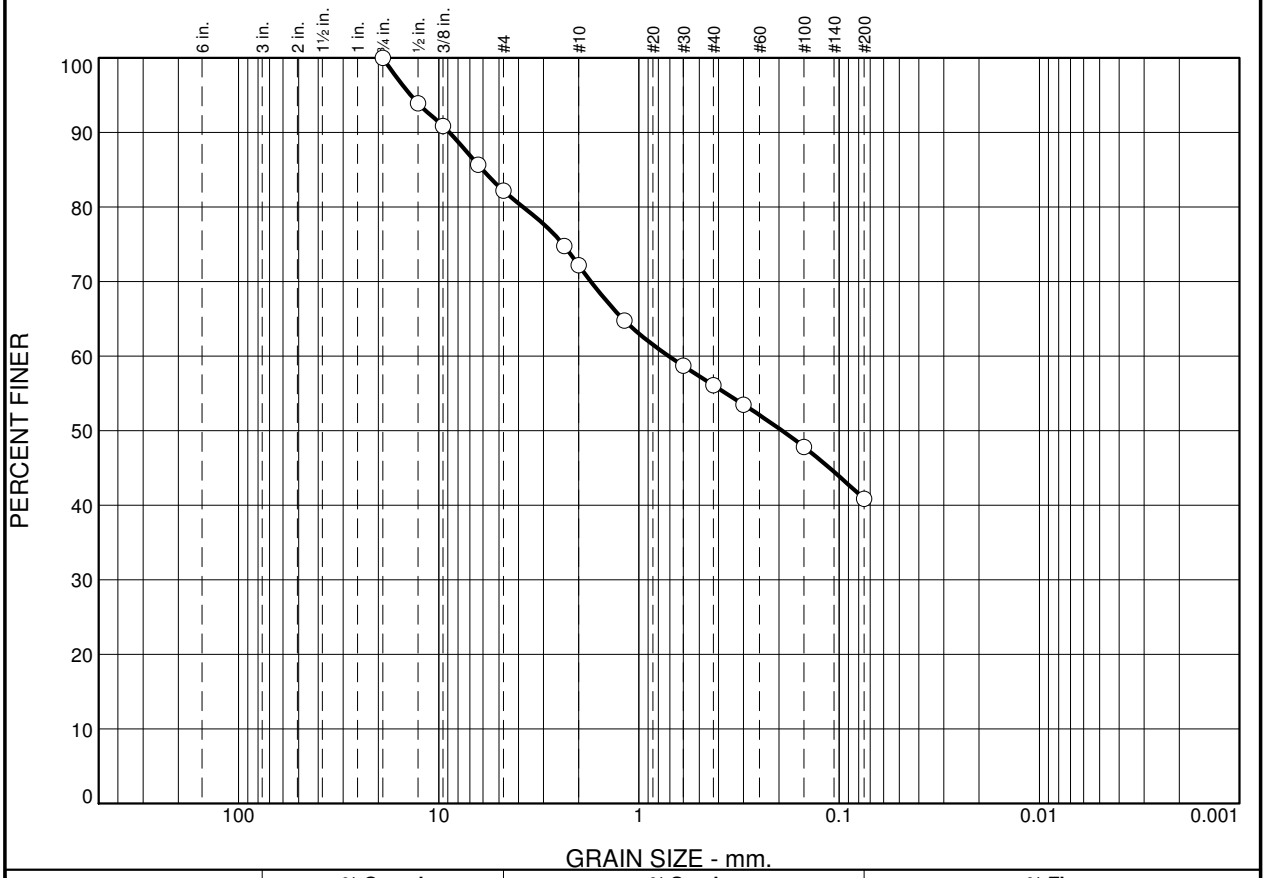
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1057

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	18	10	16	15	41	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	94		
3/8"	91		
1/4"	86		
#4	82		
#8	75		
#10	72		
#16	65		
#30	59		
#40	56		
#50	53		
#100	48		
#200	41		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 8.8388 D_{85}= 6.0388 D_{60}= 0.7098
D_{50}= 0.1926 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: B-13
Sample Number: 19L1058 **Depth:** 2.5-3.0' **Date:** 10-28-19

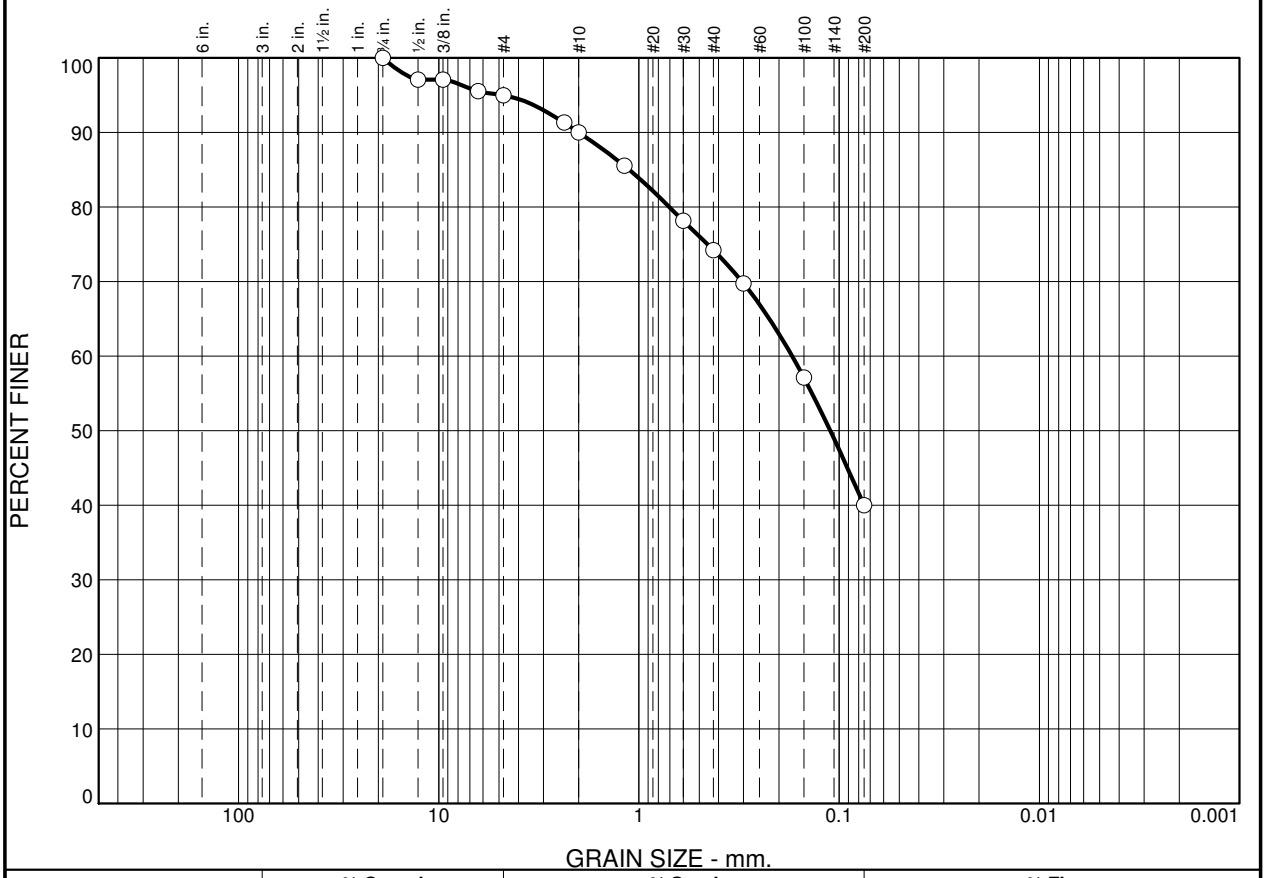
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1058

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	5	5	16	34	40	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	97		
3/8"	97		
1/4"	96		
#4	95		
#8	91		
#10	90		
#16	86		
#30	78		
#40	74		
#50	70		
#100	57		
#200	40		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 21 LL= 46 PI= 25

Coefficients

D_{90}= 2.0000 D_{85}= 1.1178 D_{60}= 0.1718
D_{50}= 0.1109 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-7-6(5)

Remarks

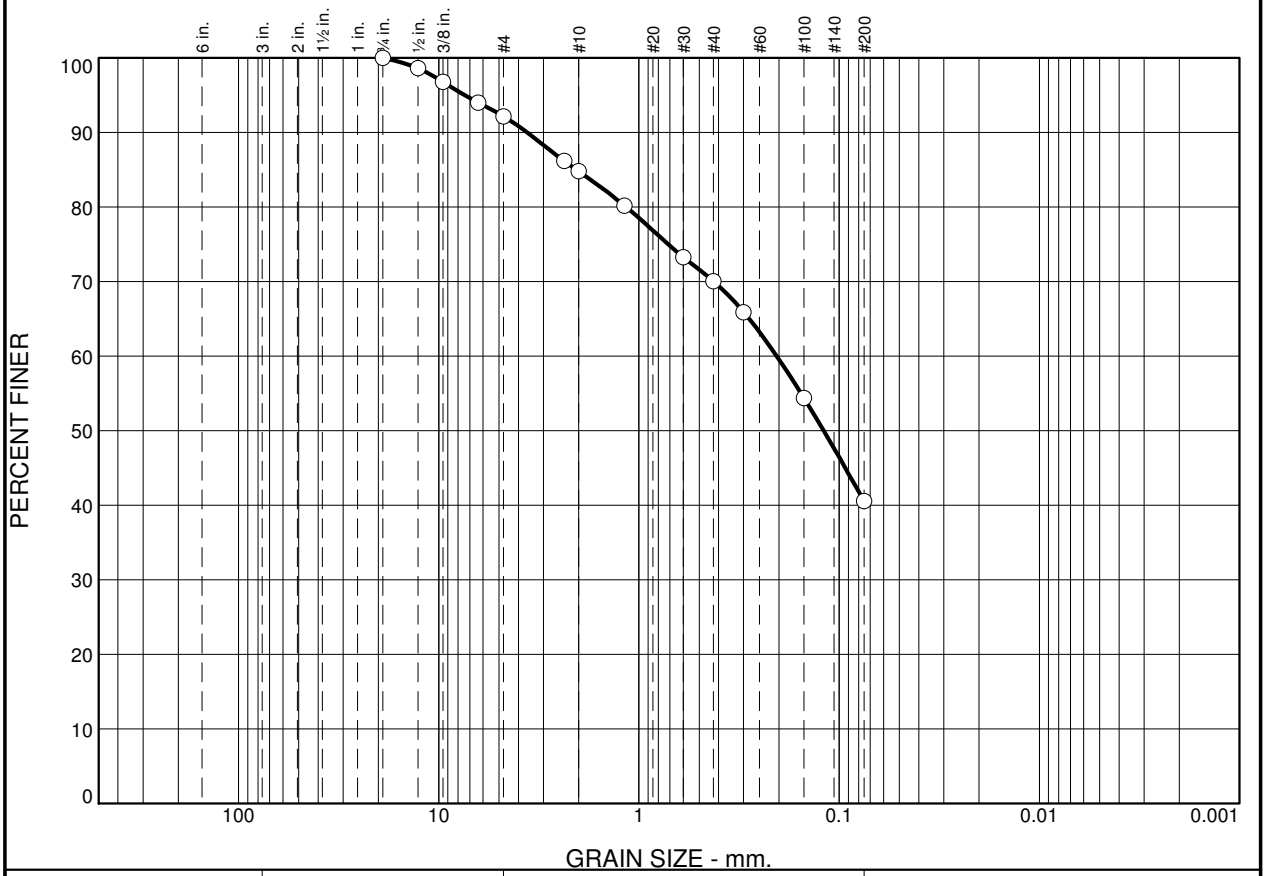
Location: B-25
Sample Number: 19L1059 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1059

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	8	7	15	29	41	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	99		
3/8"	97		
1/4"	94		
#4	92		
#8	86		
#10	85		
#16	80		
#30	73		
#40	70		
#50	66		
#100	54		
#200	41		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 15 LL= 24 PI= 9

Coefficients

D_{90}= 3.6207 D_{85}= 2.0510 D_{60}= 0.2049
D_{50}= 0.1196 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-4(0)

Remarks

Location: B-25
Sample Number: 19L1061 **Depth:** 7.5-8.0' **Date:** 10-28-19

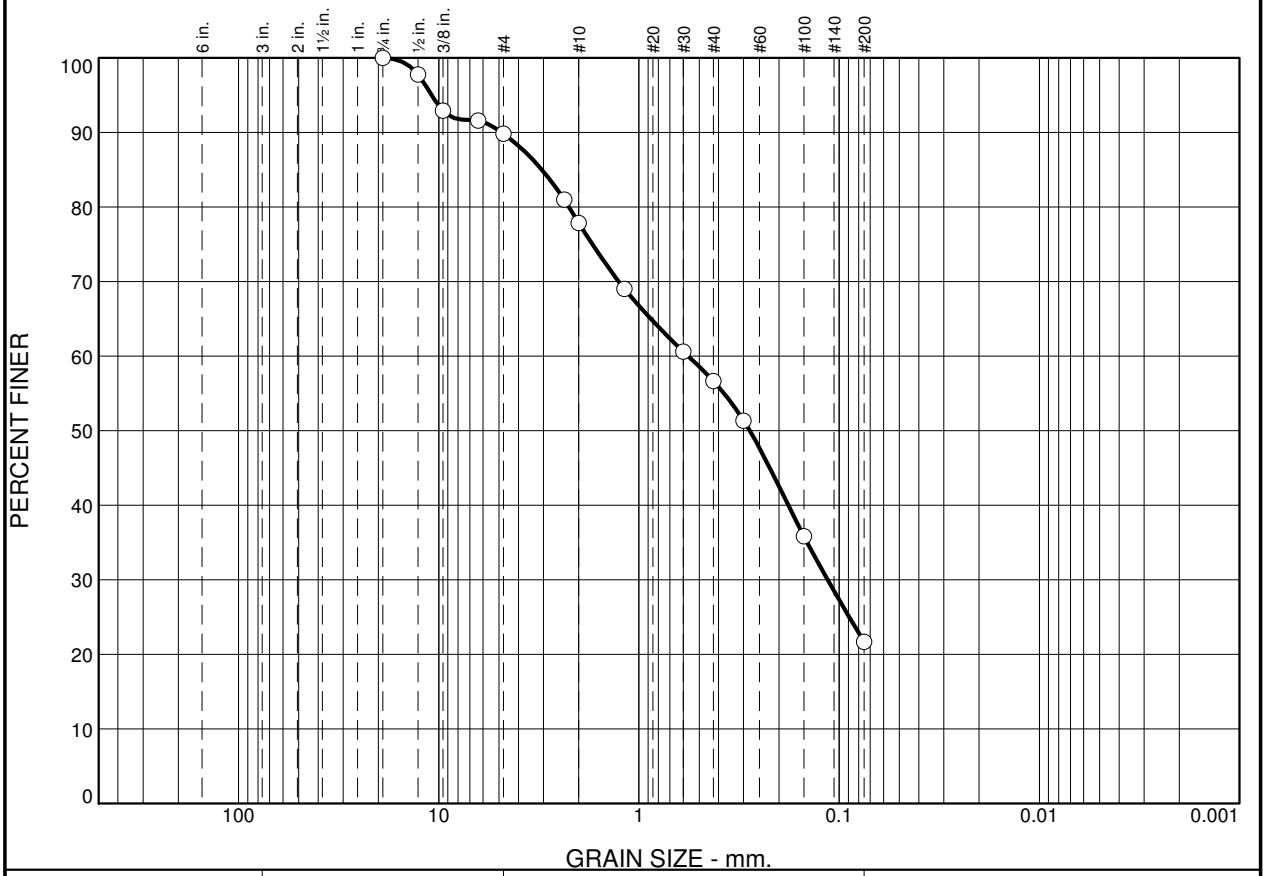
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1061

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	10	12	21	35	22	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	98		
3/8"	93		
1/4"	92		
#4	90		
#8	81		
#10	78		
#16	69		
#30	61		
#40	57		
#50	51		
#100	36		
#200	22		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 24 LL= 55 PI= 31

Coefficients

D_{90}= 4.8501 D_{85}= 3.0498 D_{60}= 0.5674
D_{50}= 0.2799 D_{30}= 0.1143 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-7(1)

Remarks

Location: B-12
Sample Number: 19L1062 **Depth:** 15-15.5' **Date:** 10-28-19

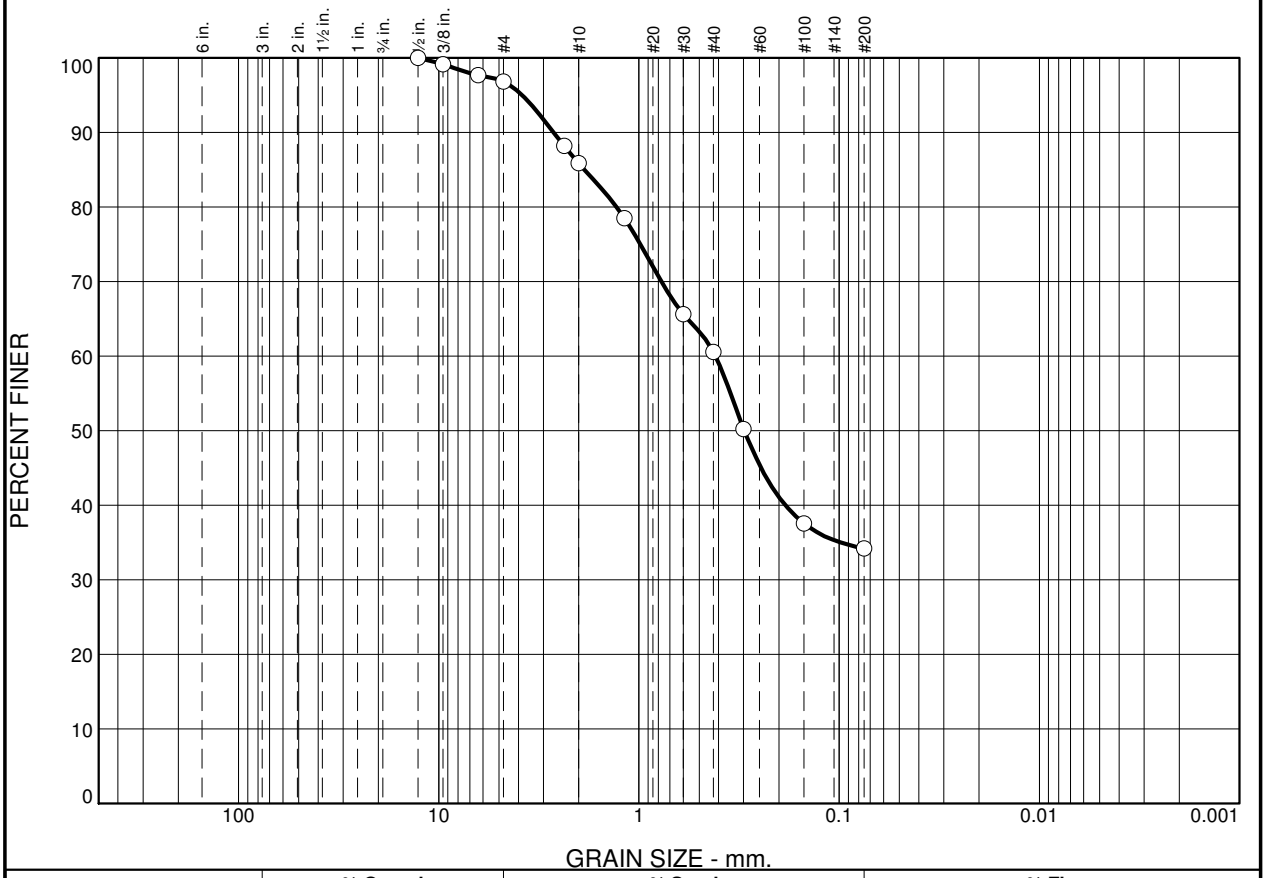
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1062

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	3	11	25	27	34	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	99		
1/4"	98		
#4	97		
#8	88		
#10	86		
#16	78		
#30	66		
#40	61		
#50	50		
#100	38		
#200	34		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 2.6657 D_{85}= 1.8725 D_{60}= 0.4151
D_{50}= 0.2979 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: B-25
Sample Number: 19L1063 **Depth:** 10-10.5' **Date:** 10-28-19

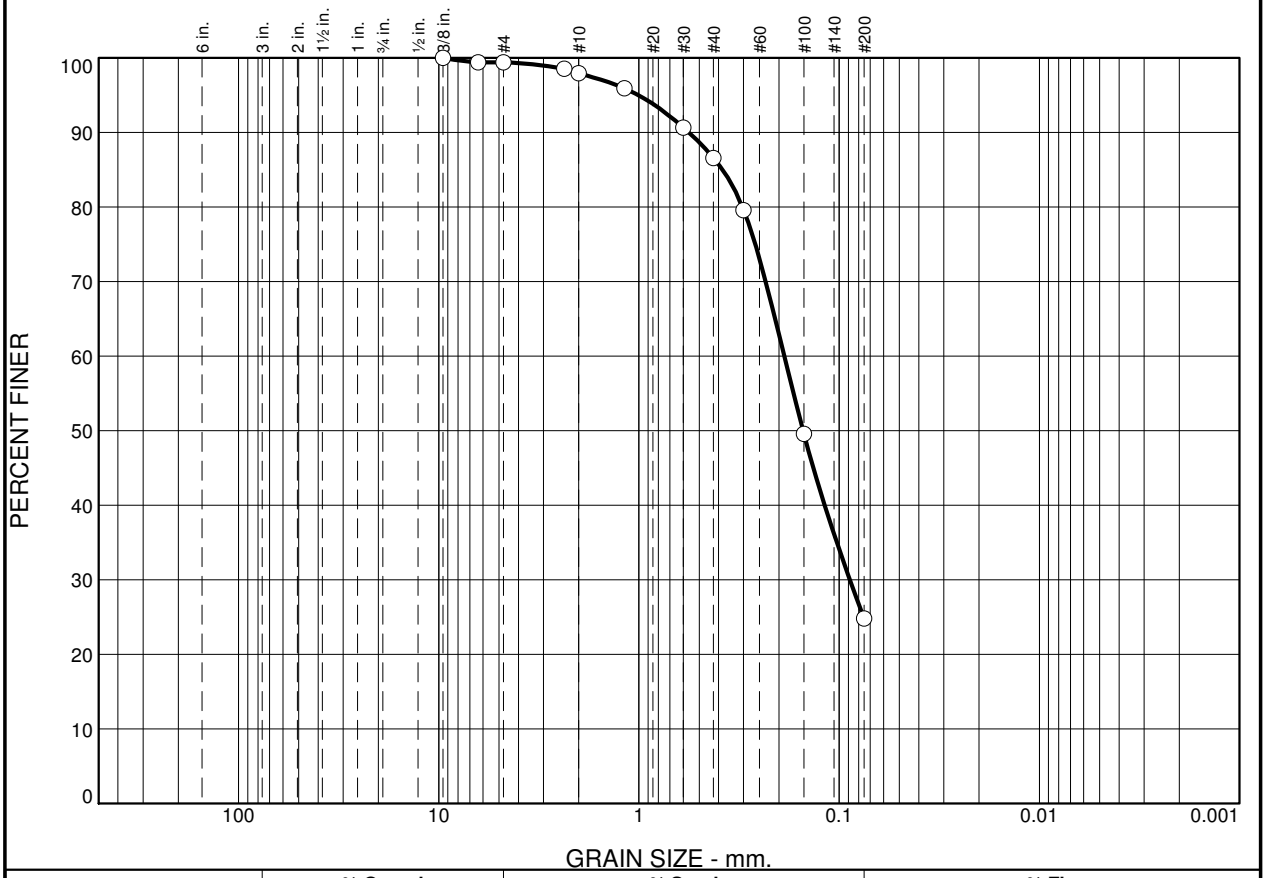
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1063

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	1	1	11	62	25	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100		
1/4"	99		
#4	99		
#8	99		
#10	98		
#16	96		
#30	91		
#40	87		
#50	80		
#100	50		
#200	25		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 22 LL= 37 PI= 15

Coefficients

D_{90}= 0.5627 D_{85}= 0.3824 D_{60}= 0.1877
D_{50}= 0.1515 D_{30}= 0.0883 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Location: B-25
Sample Number: 19L1064 **Depth:** 20-20.5' **Date:** 10-28-19

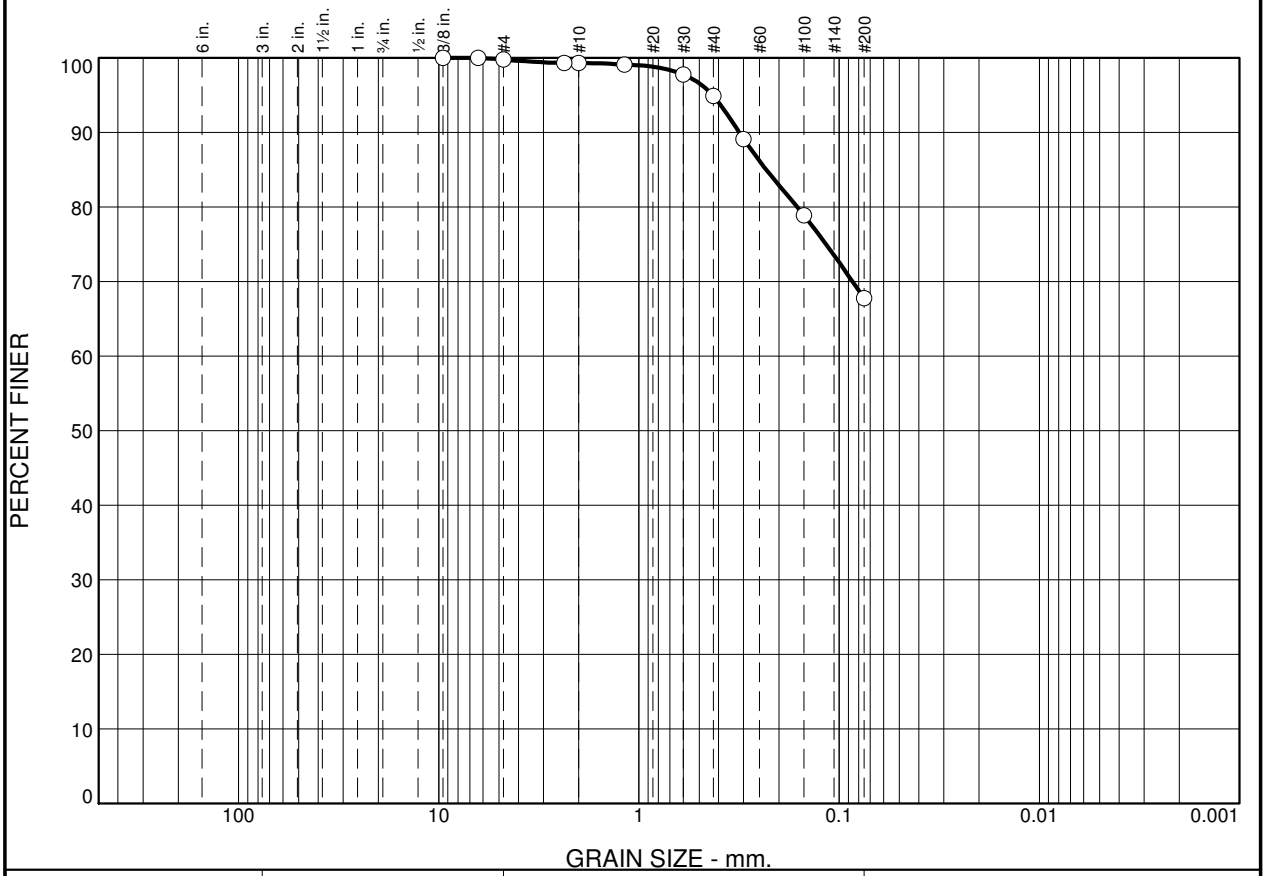
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1064

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	1	4	27	68	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100		
1/4"	100		
#4	100		
#8	99		
#10	99		
#16	99		
#30	98		
#40	95		
#50	89		
#100	79		
#200	68		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3157 D_{85}= 0.2309 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: B-25
Sample Number: 19L1066 **Depth:** 40-40.5' **Date:** 10-28-19

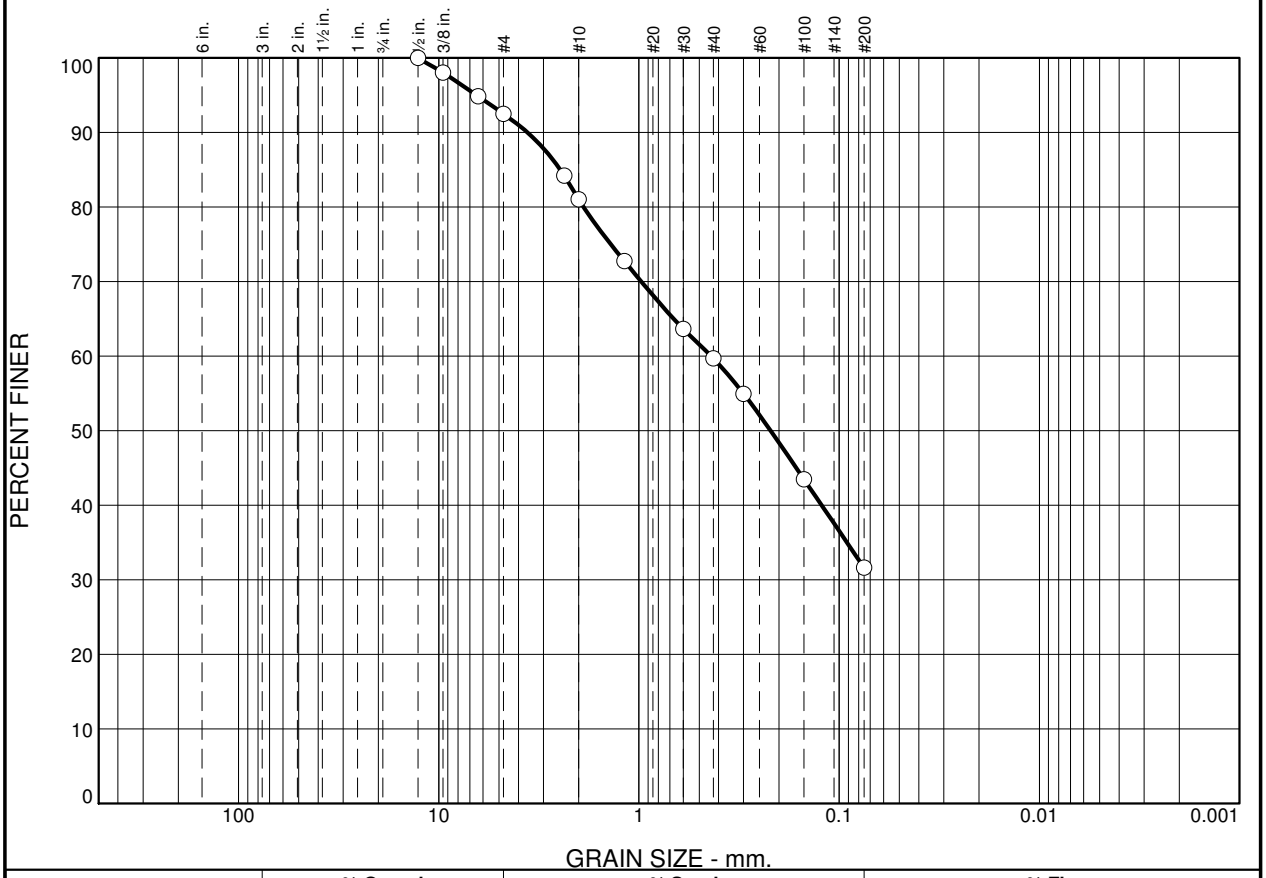
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1066

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	8	11	21	28	32	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	98		
1/4"	95		
#4	92		
#8	84		
#10	81		
#16	73		
#30	64		
#40	60		
#50	55		
#100	43		
#200	32		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 21 LL= 46 PI= 25

Coefficients

D_{90}= 3.6099 D_{85}= 2.4714 D_{60}= 0.4364
D_{50}= 0.2198 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-7(3)

Remarks

Location: B-30
Sample Number: 19L1067 **Depth:** 10-10.5' **Date:** 10-28-19

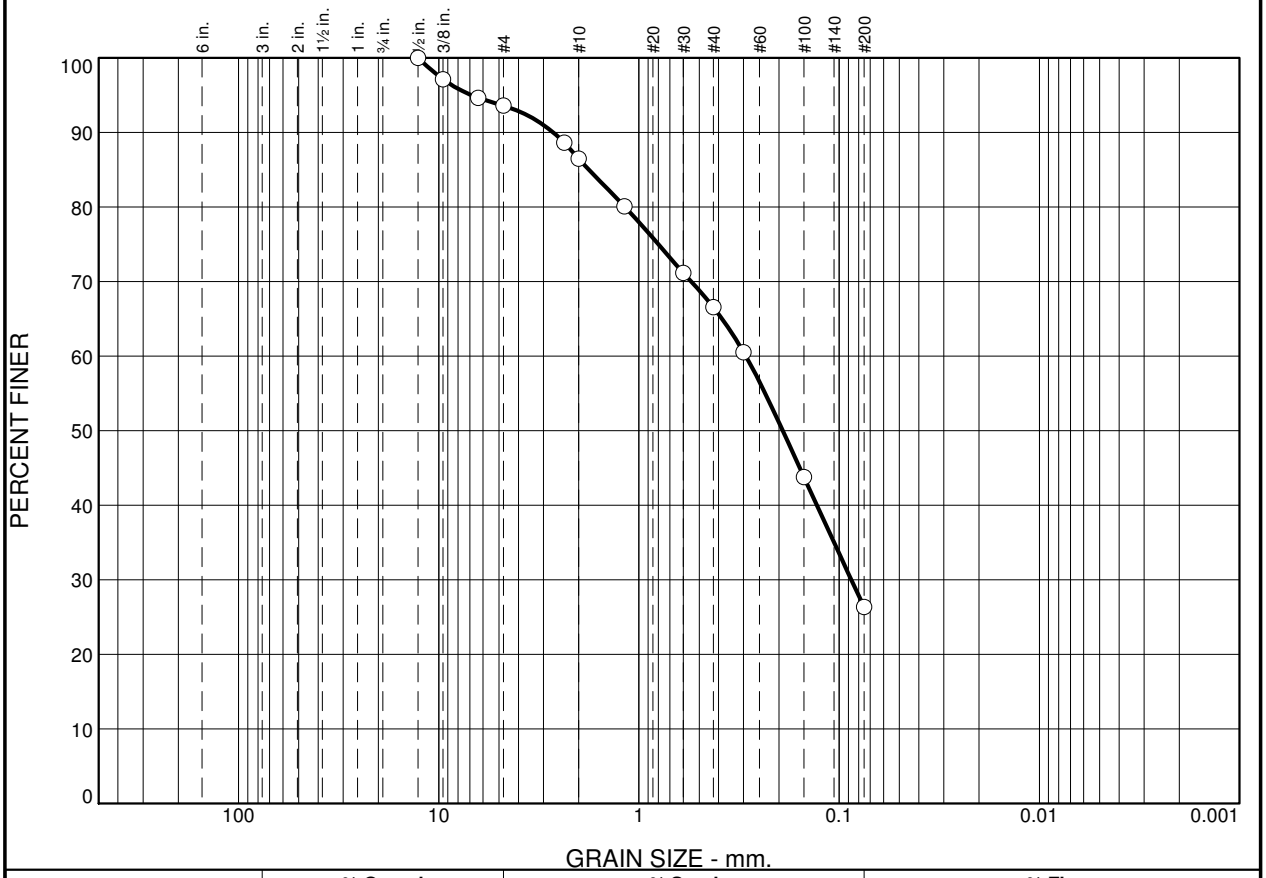
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1067

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	6	8	19	41	26	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	97		
1/4"	95		
#4	94		
#8	89		
#10	86		
#16	80		
#30	71		
#40	67		
#50	60		
#100	44		
#200	26		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 19 LL= 45 PI= 26

Coefficients

D_{90}= 2.6794 D_{85}= 1.7792 D_{60}= 0.2928
D_{50}= 0.1912 D_{30}= 0.0869 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-7(2)

Remarks

Location: B-30
Sample Number: 19L1068 **Depth:** 15-15.5' **Date:** 10-28-19

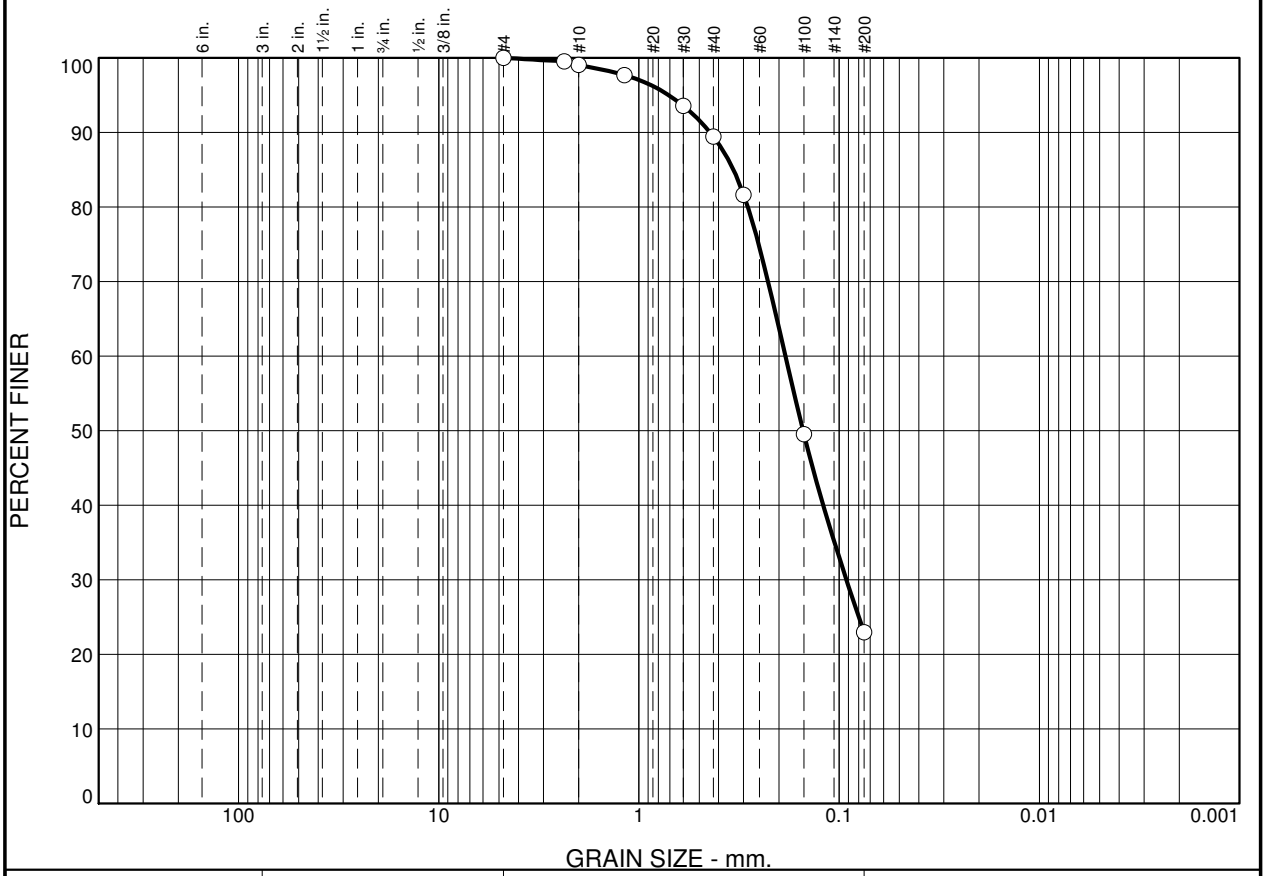
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1068

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	1	10	66	23	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100		
#8	100		
#10	99		
#16	98		
#30	94		
#40	89		
#50	82		
#100	50		
#200	23		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 20 LL= 39 PI= 19

Coefficients

D_{90}= 0.4411 D_{85}= 0.3374 D_{60}= 0.1853
D_{50}= 0.1515 D_{30}= 0.0920 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: B-30
Sample Number: 19L1069 **Depth:** 19.5-20' **Date:** 10-28-19

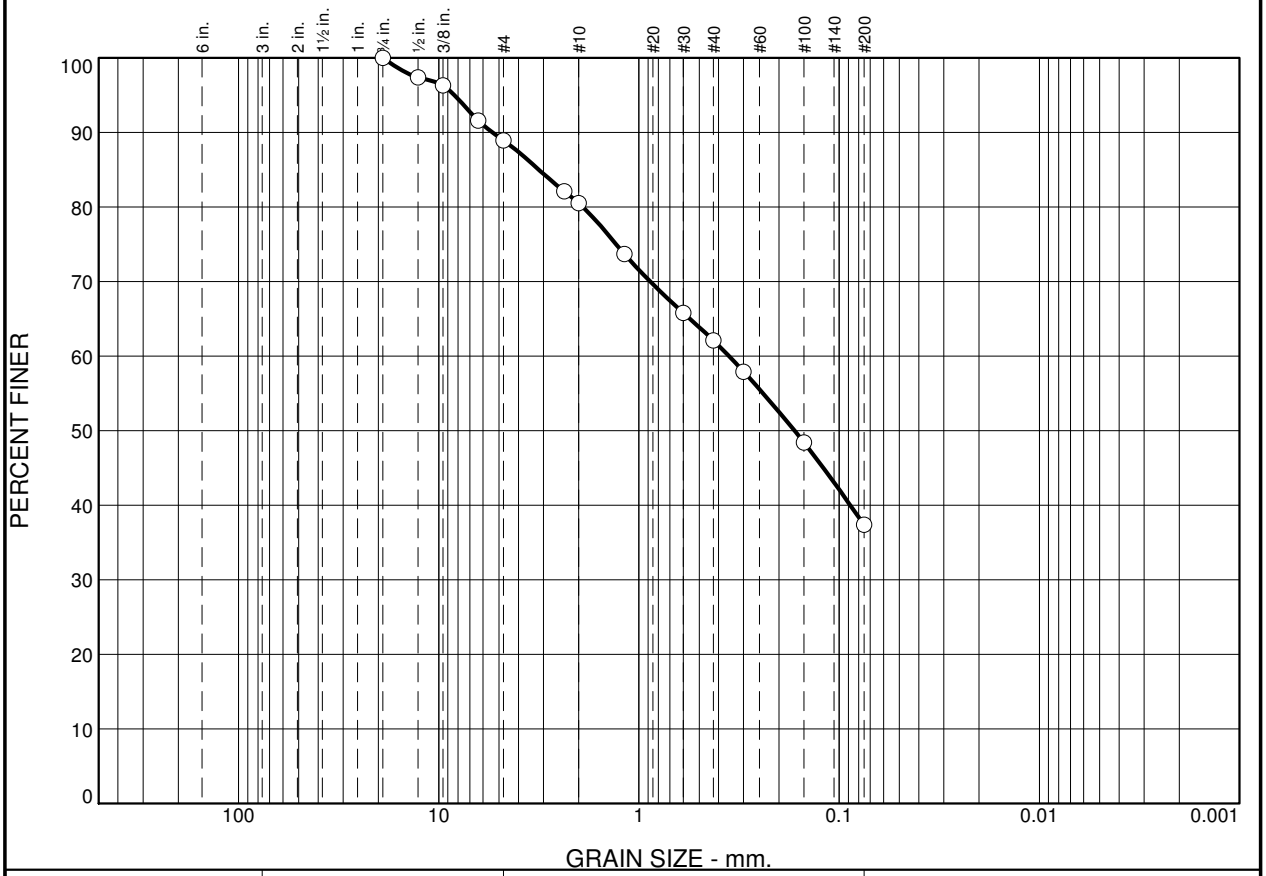
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1069

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	11	8	19	25	37	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	97		
3/8"	96		
1/4"	92		
#4	89		
#8	82		
#10	81		
#16	74		
#30	66		
#40	62		
#50	58		
#100	48		
#200	37		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 17 LL= 36 PI= 19

Coefficients

D_{90}= 5.3869 D_{85}= 3.1582 D_{60}= 0.3553
D_{50}= 0.1670 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-6(2)

Remarks

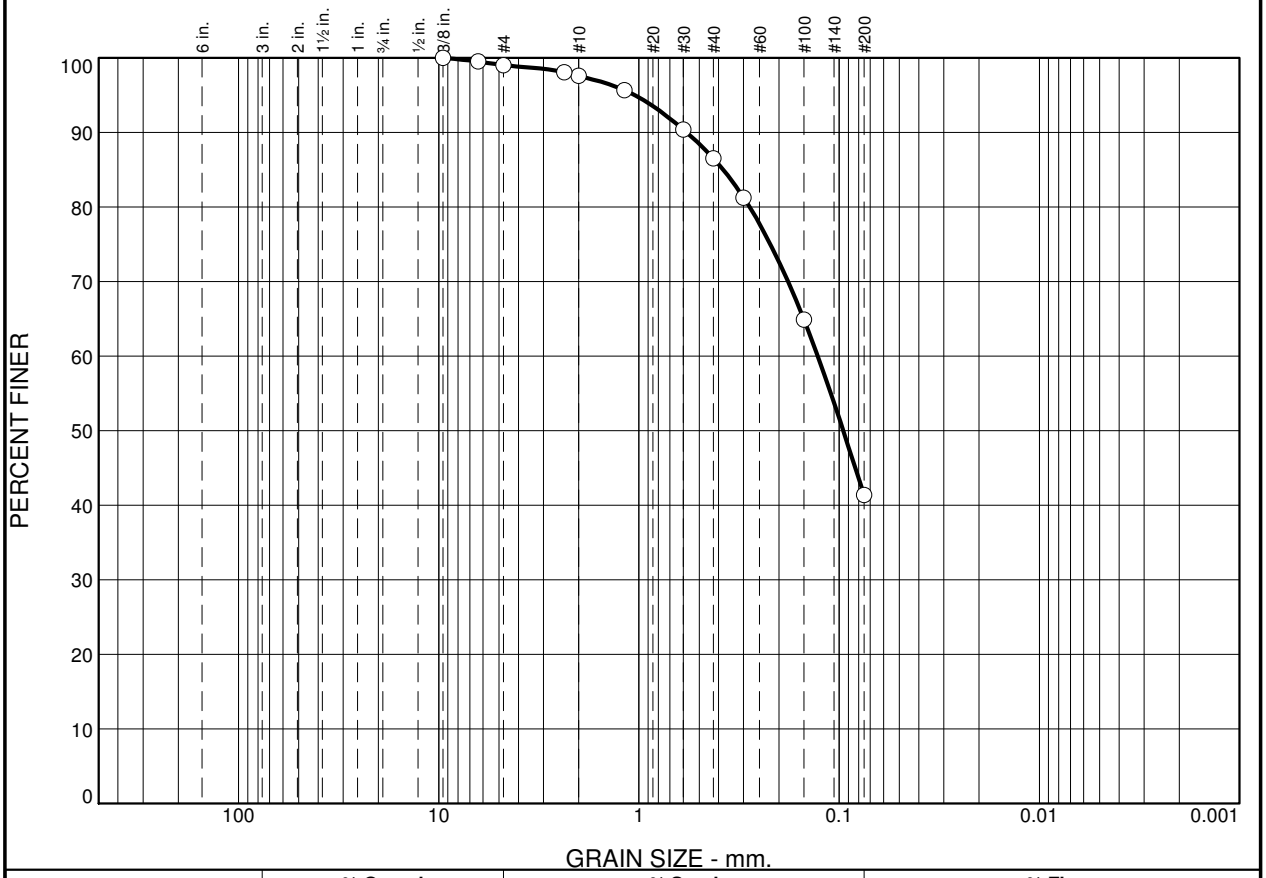
Location: B-21
Sample Number: 19L1070 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1070

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	1	1	11	46	41	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100		
1/4"	100		
#4	99		
#8	98		
#10	98		
#16	96		
#30	90		
#40	87		
#50	81		
#100	65		
#200	41		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 16 LL= 37 PI= 21

Coefficients

D_{90}= 0.5774 D_{85}= 0.3794 D_{60}= 0.1281
D_{50}= 0.0955 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-6(4)

Remarks

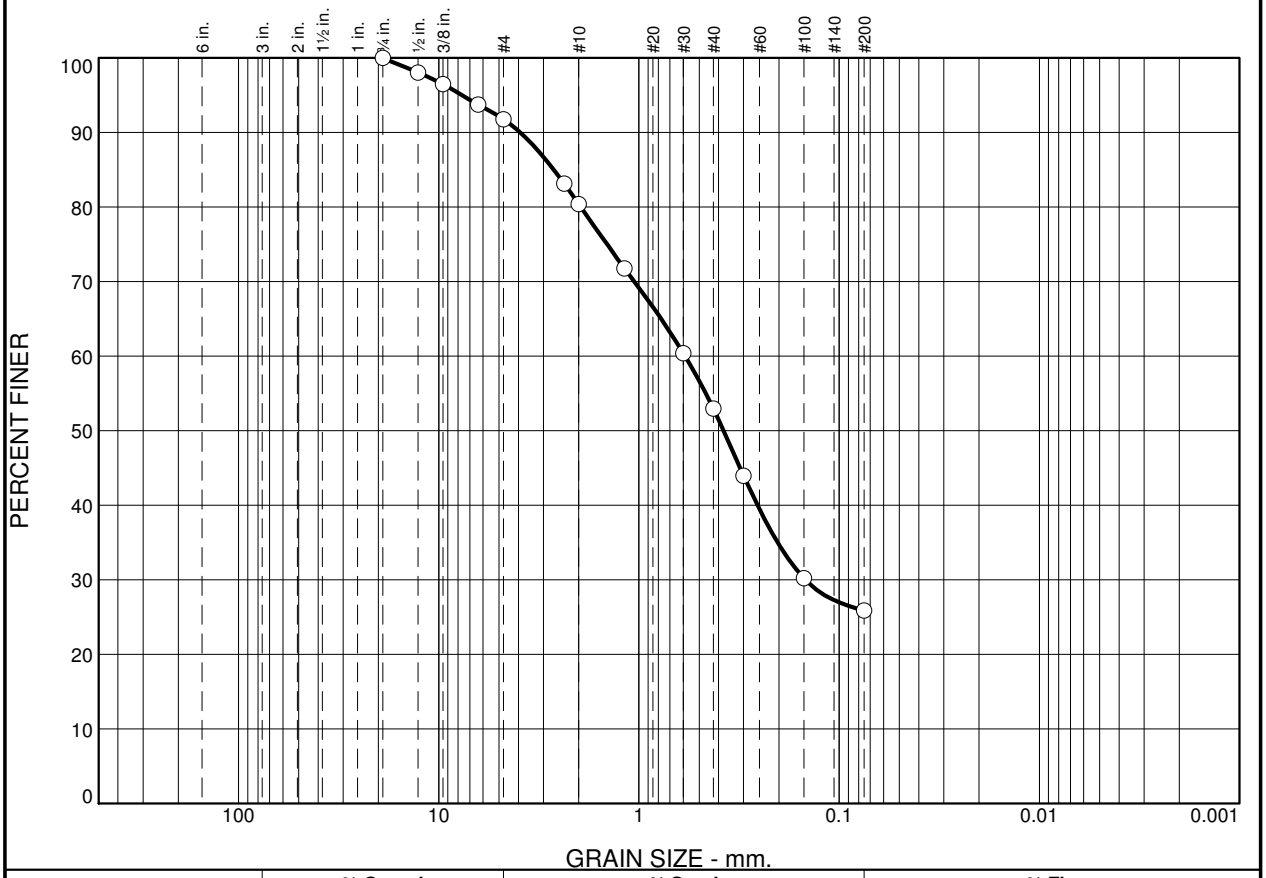
Location: B-21
Sample Number: 19L1071 **Depth:** 19.5-20' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1071

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	8	12	27	27	26	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	98		
3/8"	96		
1/4"	94		
#4	92		
#8	83		
#10	80		
#16	72		
#30	60		
#40	53		
#50	44		
#100	30		
#200	26		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 17 LL= 31 PI= 14

Coefficients

D_{90}= 3.9243 D_{85}= 2.6600 D_{60}= 0.5879
D_{50}= 0.3784 D_{30}= 0.1476 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Location: B-15
Sample Number: 19L1072 **Depth:** 7.5-8.0' **Date:** 10-28-19

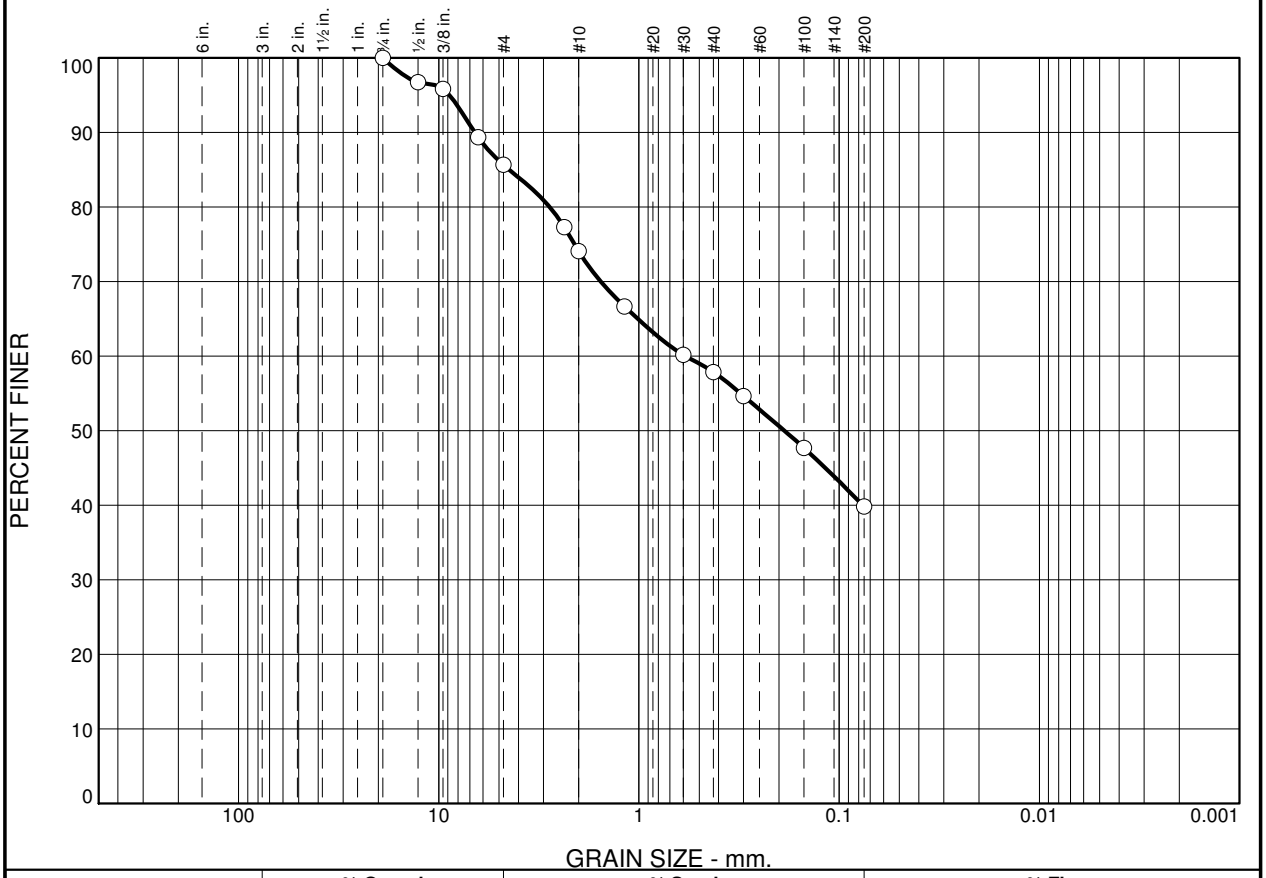
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1072

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	14	12	16	18	40	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	97		
3/8"	96		
1/4"	89		
#4	86		
#8	77		
#10	74		
#16	67		
#30	60		
#40	58		
#50	55		
#100	48		
#200	40		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 17 LL= 50 PI= 33

Coefficients

D_{90}= 6.5971 D_{85}= 4.4517 D_{60}= 0.5842
D_{50}= 0.1878 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-7-6(7)

Remarks

Location: B-19
Sample Number: 19L1073 **Depth:** 2.5-3.0' **Date:** 10-28-19

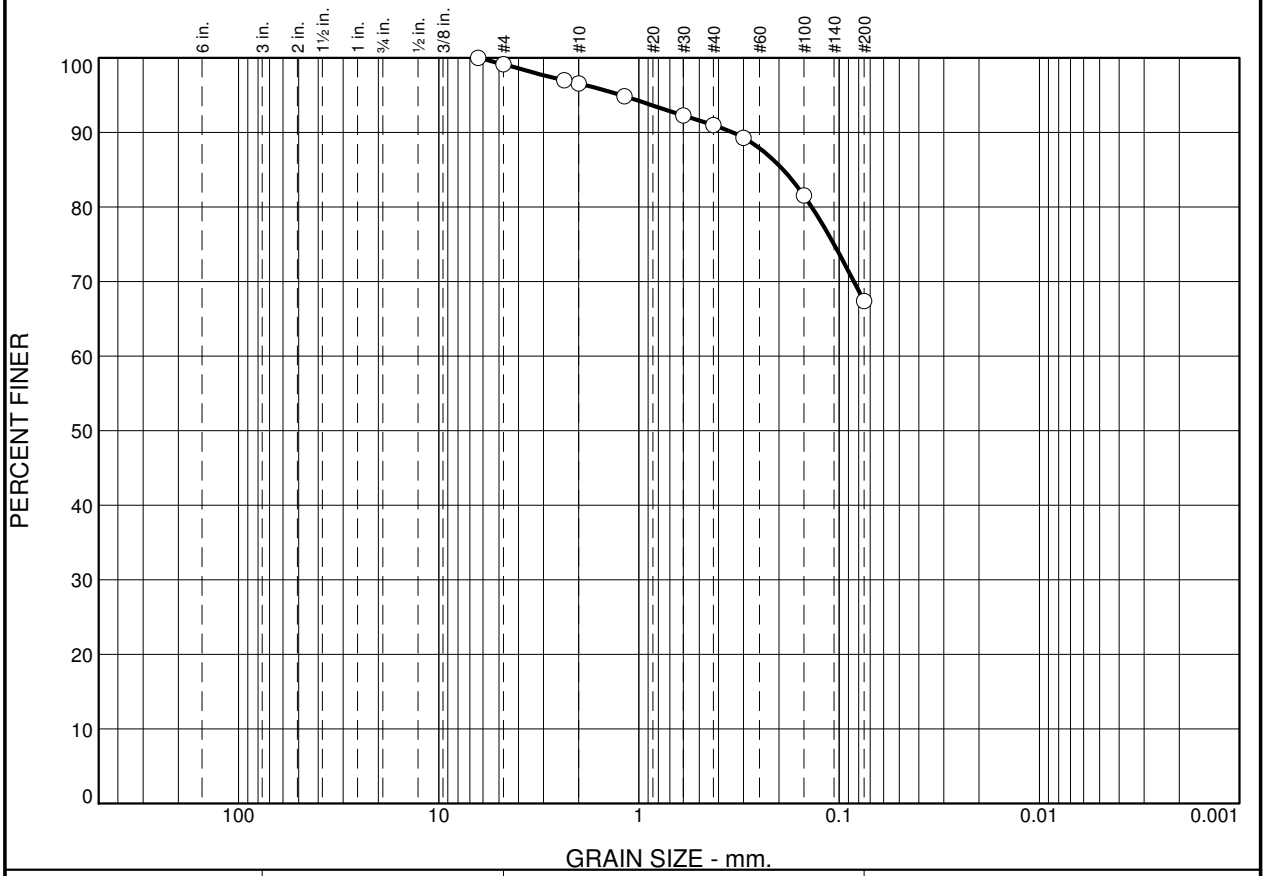
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1073

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	1	2	6	24	67	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/4"	100		
#4	99		
#8	97		
#10	97		
#16	95		
#30	92		
#40	91		
#50	89		
#100	82		
#200	67		

* (no specification provided)

Soil Description

sandy fat clay

Atterberg Limits

PL= 19 LL= 57 PI= 38

Coefficients

D_{90}= 0.3405 D_{85}= 0.1904 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CH AASHTO= A-7-6(24)

Remarks

Location: B-19
Sample Number: 19L1074 **Depth:** 7.5-8.0' **Date:** 10-28-19

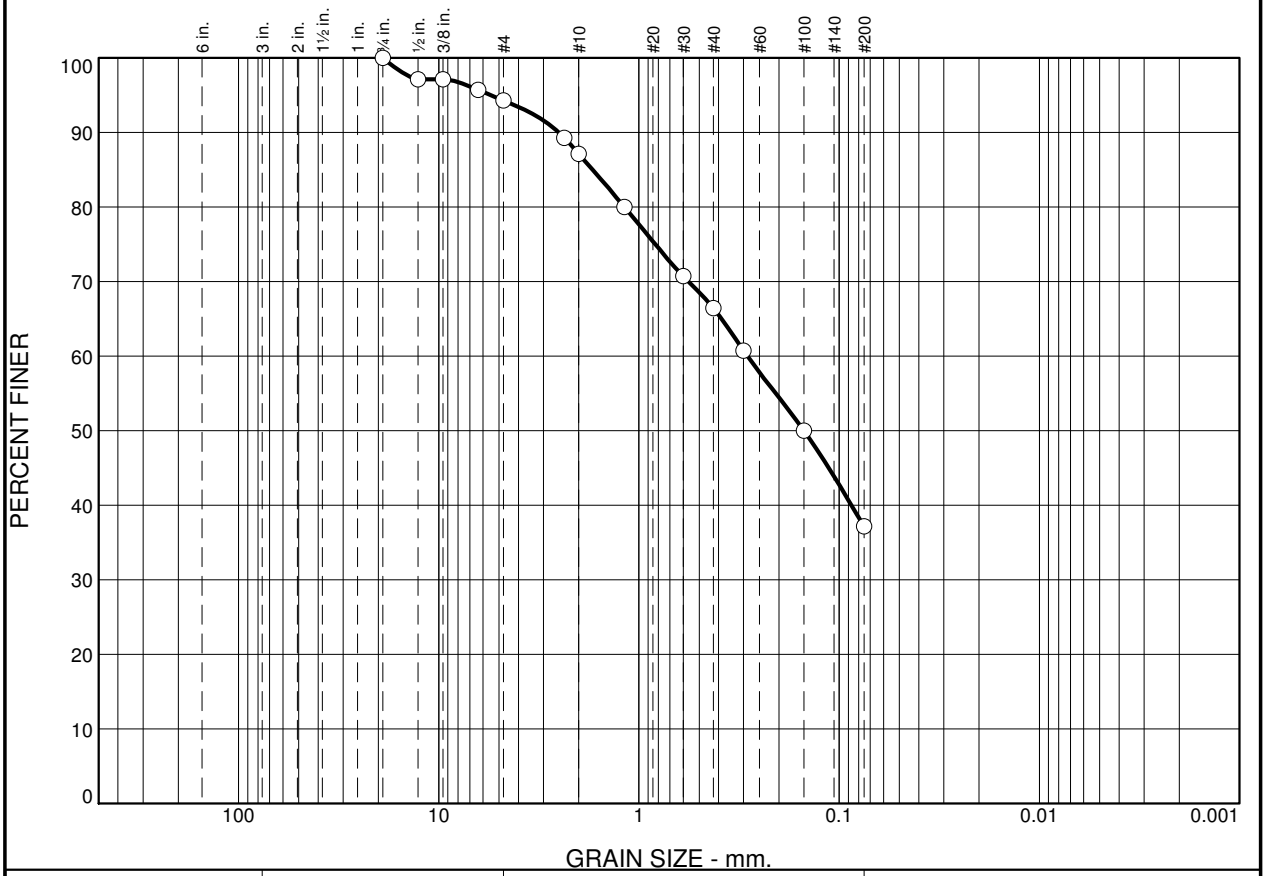
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1074

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	6	7	21	29	37	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	97		
3/8"	97		
1/4"	96		
#4	94		
#8	89		
#10	87		
#16	80		
#30	71		
#40	66		
#50	61		
#100	50		
#200	37		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 2.5151 D_{85}= 1.7044 D_{60}= 0.2872
D_{50}= 0.1500 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

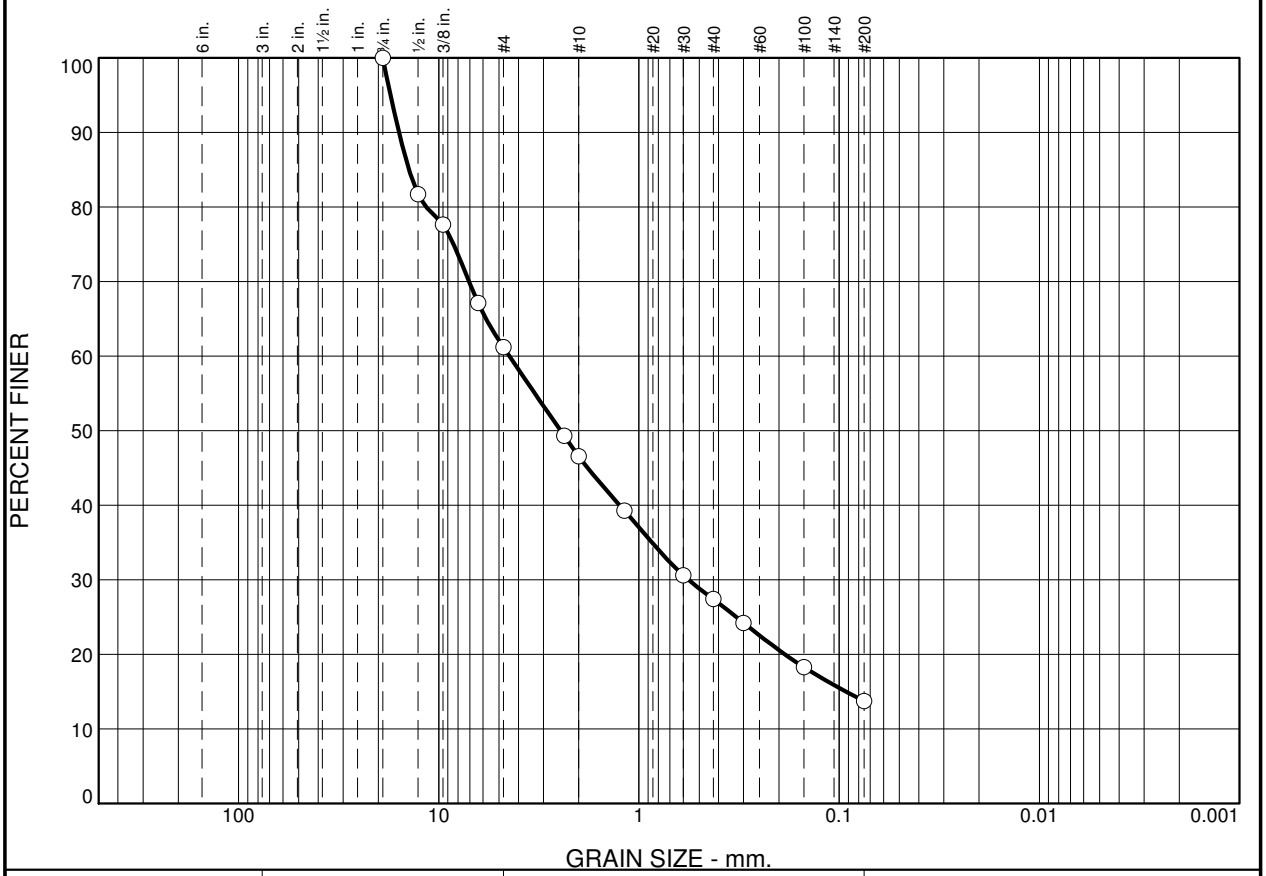
Location: B-26
Sample Number: 19L1075 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1075

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	39	14	20	13	14	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	82		
3/8"	78		
1/4"	67		
#4	61		
#8	49		
#10	47		
#16	39		
#30	31		
#40	27		
#50	24		
#100	18		
#200	14		

* (no specification provided)

Soil Description

clayey sand with gravel

Atterberg Limits

PL= 20 LL= 34 PI= 14

Coefficients

D_{90}= 15.7843 D_{85}= 14.0832 D_{60}= 4.4389
D_{50}= 2.4580 D_{30}= 0.5660 D_{15}= 0.0926
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

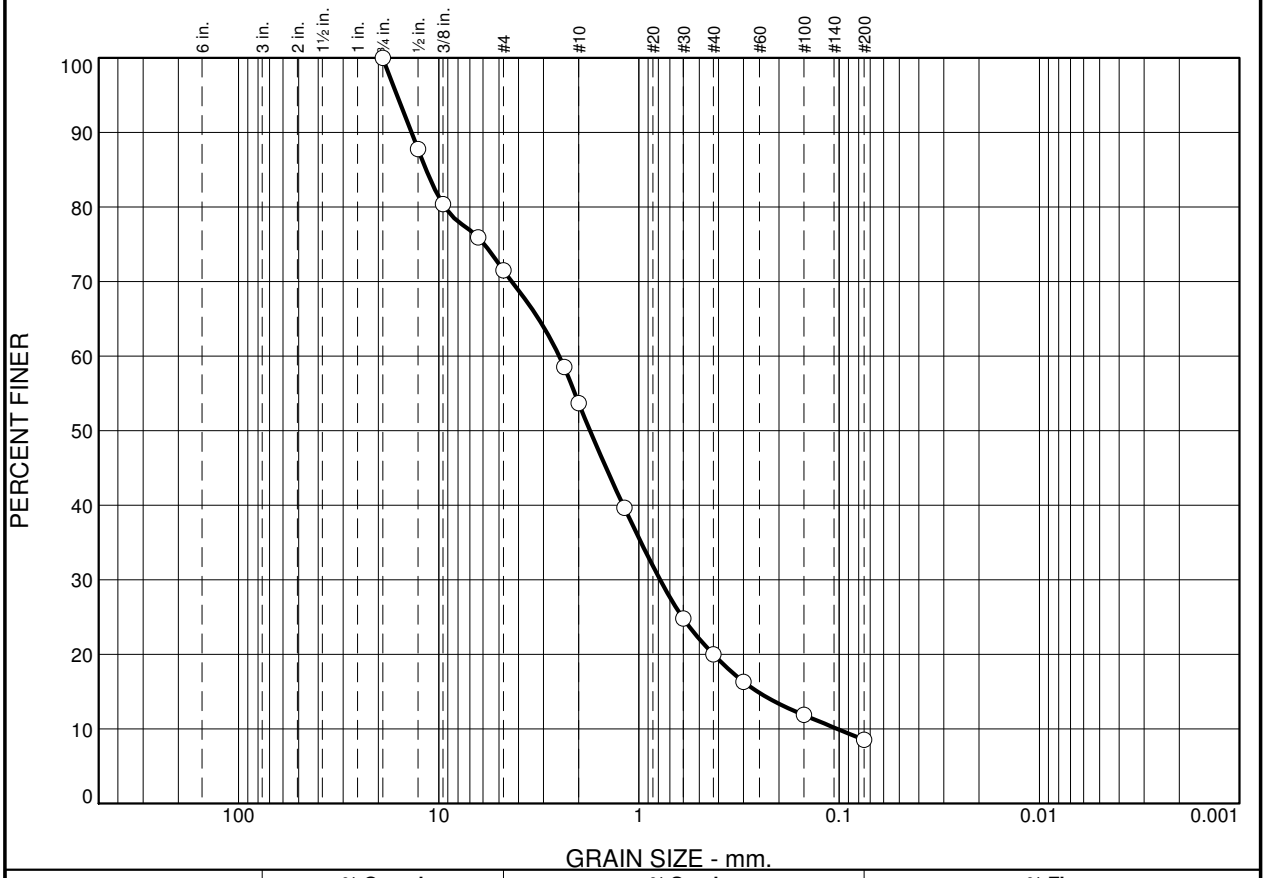
Location: B-26
Sample Number: 19L1078 **Depth:** 15-15.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1078

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	29	17	34	11	9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	88		
3/8"	80		
1/4"	76		
#4	71		
#8	59		
#10	54		
#16	40		
#30	25		
#40	20		
#50	16		
#100	12		
#200	8.5		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 13.6826 D_{85}= 11.5463 D_{60}= 2.4986
D_{50}= 1.7570 D_{30}= 0.7847 D_{15}= 0.2562
D_{10}= 0.1025 C_u= 24.37 C_c= 2.40

Classification

USCS= AASHTO=

Remarks

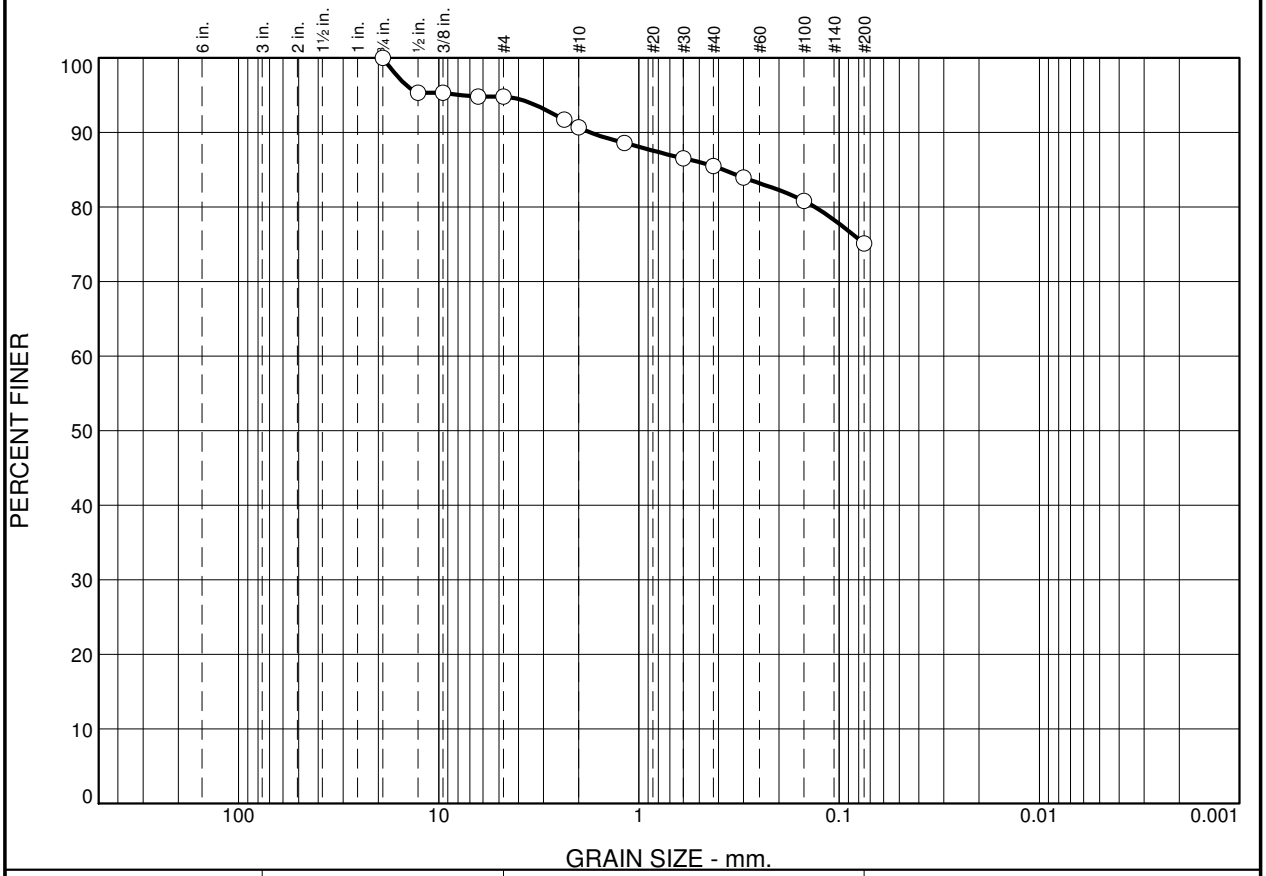
Location: B-26
Sample Number: 19L1079 **Depth:** 20-20.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1079

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	5	4	6	10	75	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	95		
3/8"	95		
1/4"	95		
#4	95		
#8	92		
#10	91		
#16	89		
#30	87		
#40	85		
#50	84		
#100	81		
#200	75		

* (no specification provided)

Soil Description

fat clay with sand

Atterberg Limits

PL= 22 LL= 87 PI= 65

Coefficients

D_{90}= 1.7518 D_{85}= 0.3778 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CH AASHTO= A-7-6(50)

Remarks

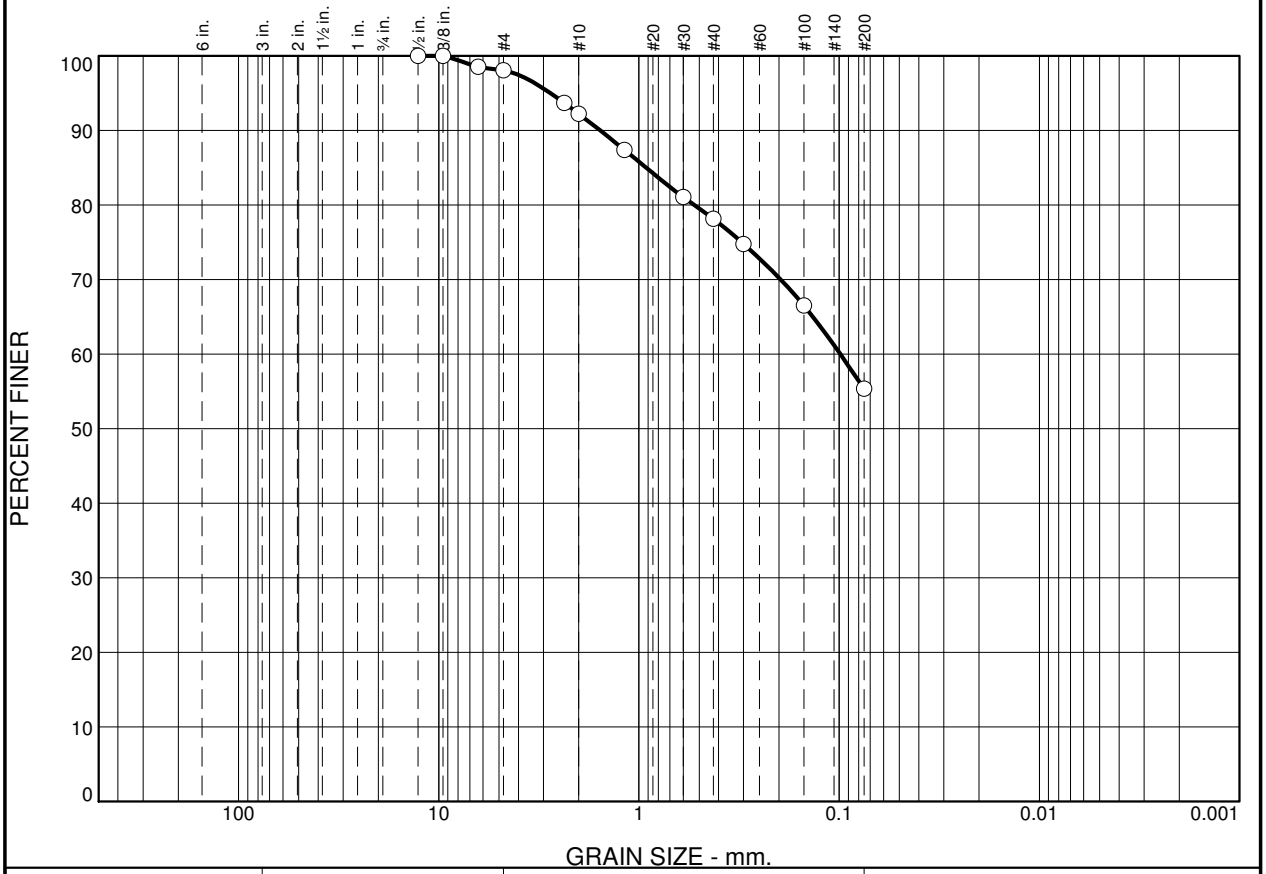
Location: B-26
Sample Number: 19L1080 **Depth:** 30-30.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1080

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	6	14	23	55	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	100		
1/4"	99		
#4	98		
#8	94		
#10	92		
#16	87		
#30	81		
#40	78		
#50	75		
#100	67		
#200	55		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 17 LL= 47 PI= 30

Coefficients

D_{90}= 1.5625 D_{85}= 0.9205 D_{60}= 0.0988
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(13)

Remarks

Location: B-27
Sample Number: 19L1081 **Depth:** 7.5-8.0' **Date:** 10-28-19

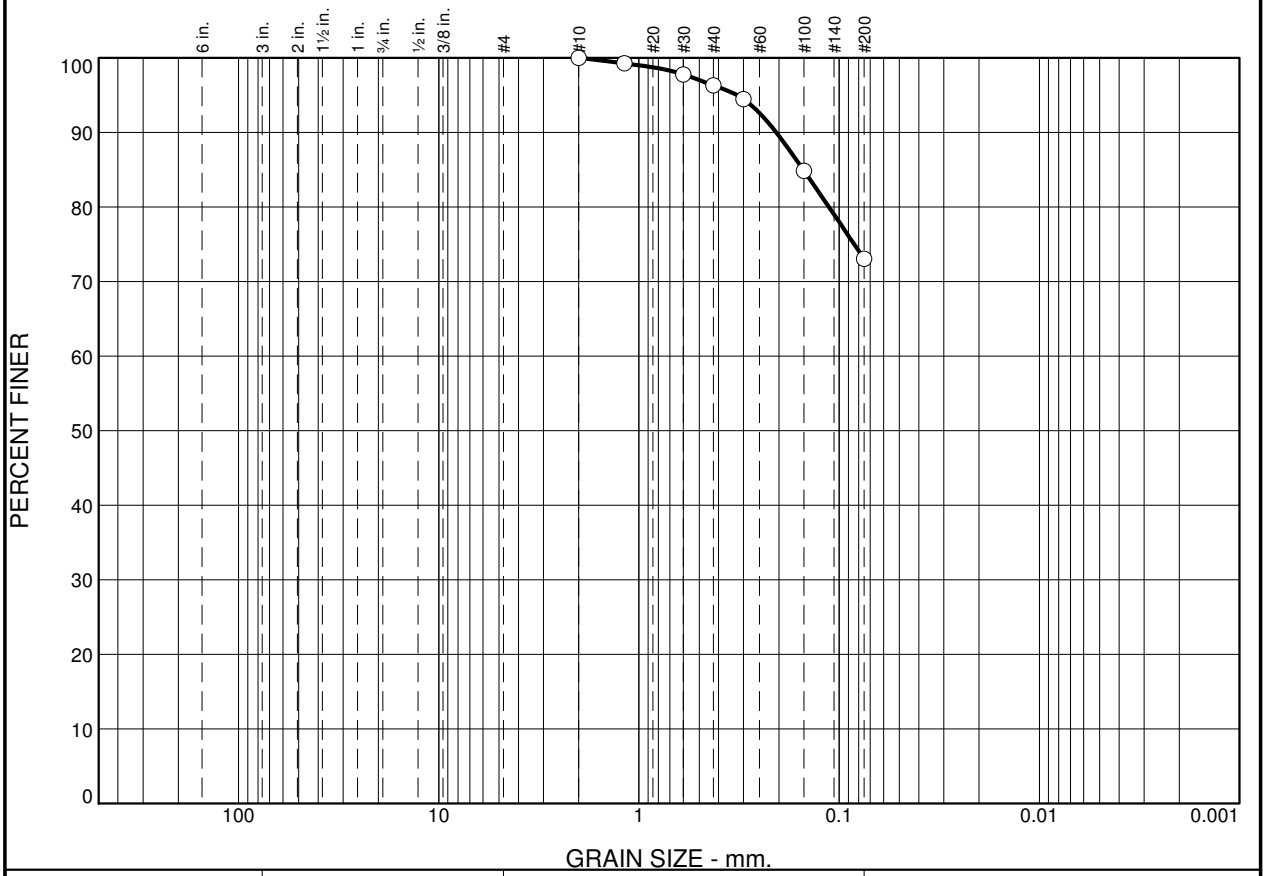
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1081

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	4	23	73	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100		
#16	99		
#30	98		
#40	96		
#50	94		
#100	85		
#200	73		

* (no specification provided)

Soil Description

lean clay with sand

Atterberg Limits

PL= 17 LL= 42 PI= 25

Coefficients

D_{90}= 0.2059 D_{85}= 0.1512 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(17)

Remarks

Location: B-27
Sample Number: 19L1083 **Depth:** 15-15.5' **Date:** 10-28-19

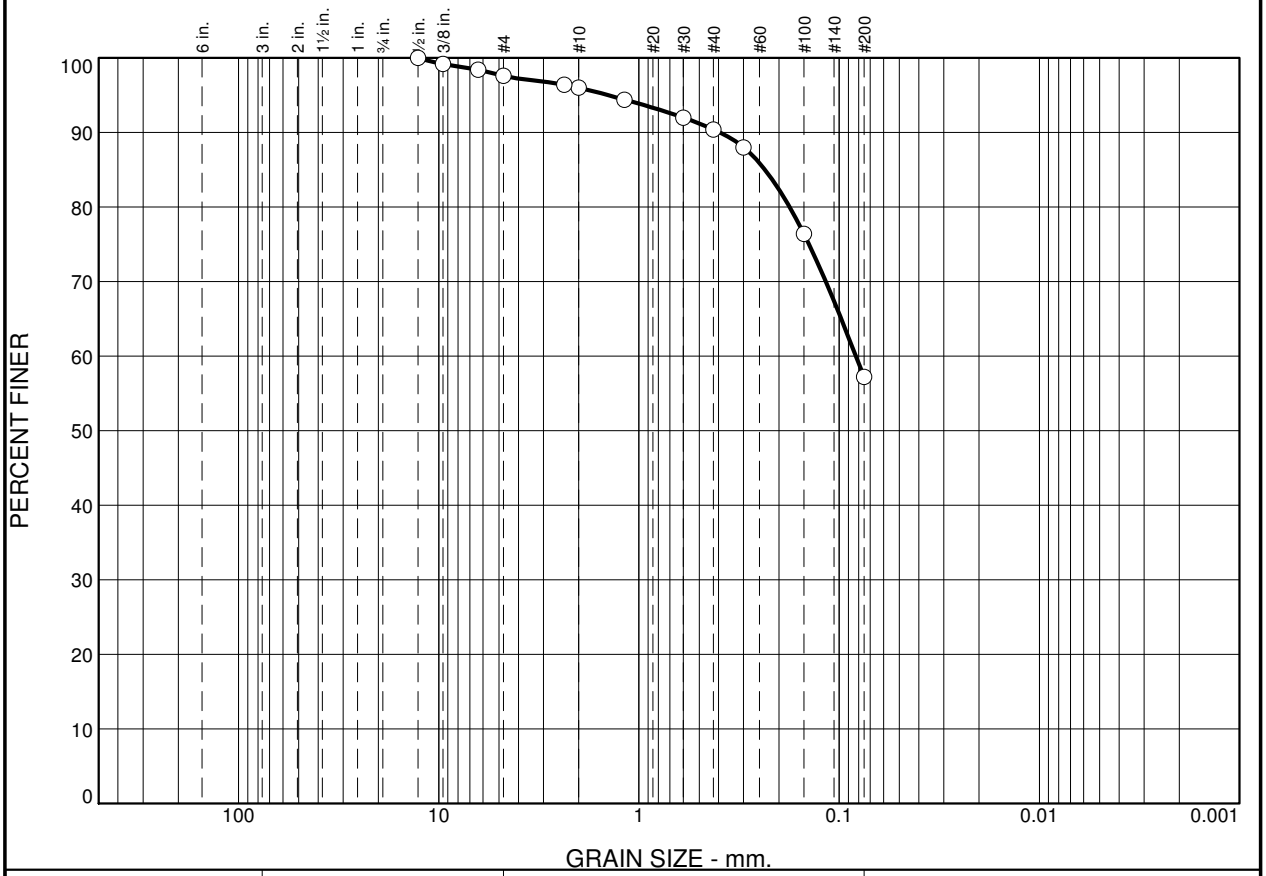
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1083

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	2	6	33	57	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	99		
1/4"	98		
#4	98		
#8	96		
#10	96		
#16	94		
#30	92		
#40	90		
#50	88		
#100	76		
#200	57		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 17 LL= 40 PI= 23

Coefficients

D_{90}= 0.3946 D_{85}= 0.2347 D_{60}= 0.0824
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(10)

Remarks

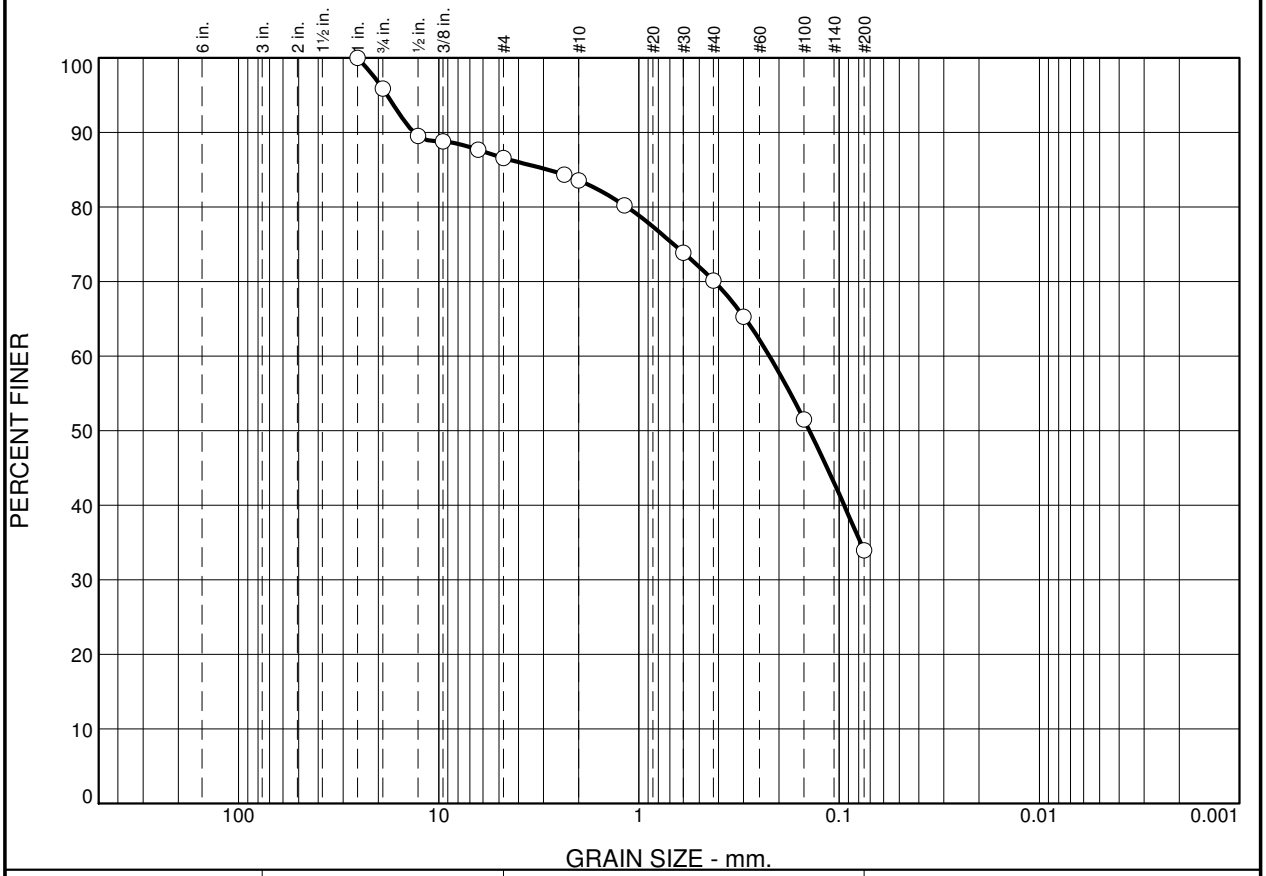
Location: B-35
Sample Number: 19L1085 **Depth:** 10-10.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1085

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	4	9	3	14	36	34	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	96		
1/2"	90		
3/8"	89		
1/4"	88		
#4	87		
#8	84		
#10	84		
#16	80		
#30	74		
#40	70		
#50	65		
#100	51		
#200	34		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 17 LL= 39 PI= 22

Coefficients

D_{90}= 13.2949 D_{85}= 2.8445 D_{60}= 0.2228
D_{50}= 0.1408 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

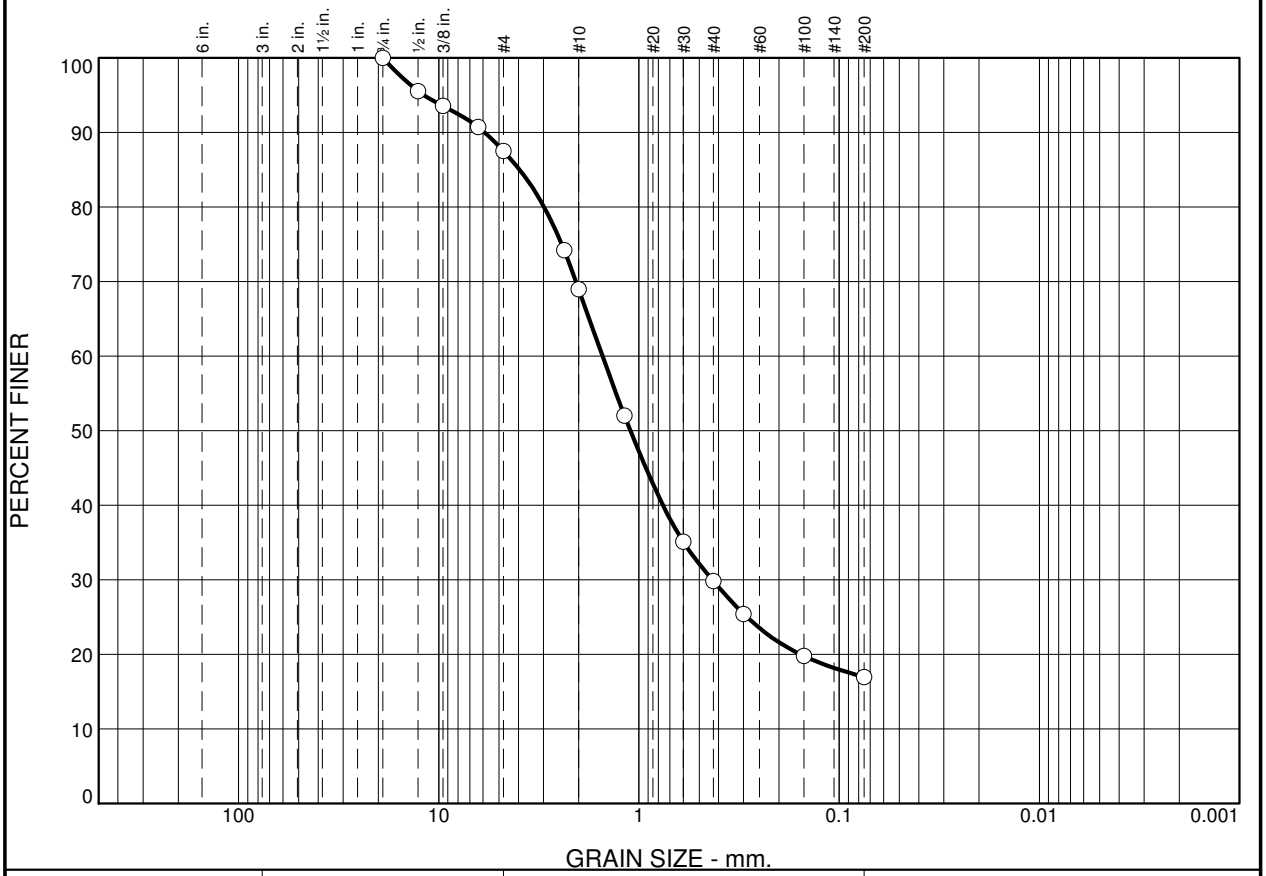
Location: B-35
Sample Number: 19L1086 **Depth:** 20-20.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1086

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	13	18	39	13	17	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	96		
3/8"	94		
1/4"	91		
#4	87		
#8	74		
#10	69		
#16	52		
#30	35		
#40	30		
#50	25		
#100	20		
#200	17		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 14 LL= 30 PI= 16

Coefficients

D_{90}= 5.8937 D_{85}= 3.9490 D_{60}= 1.5213
D_{50}= 1.1031 D_{30}= 0.4301 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Location: B-34
Sample Number: 19L1087 **Depth:** 10-10.5' **Date:** 10-28-19

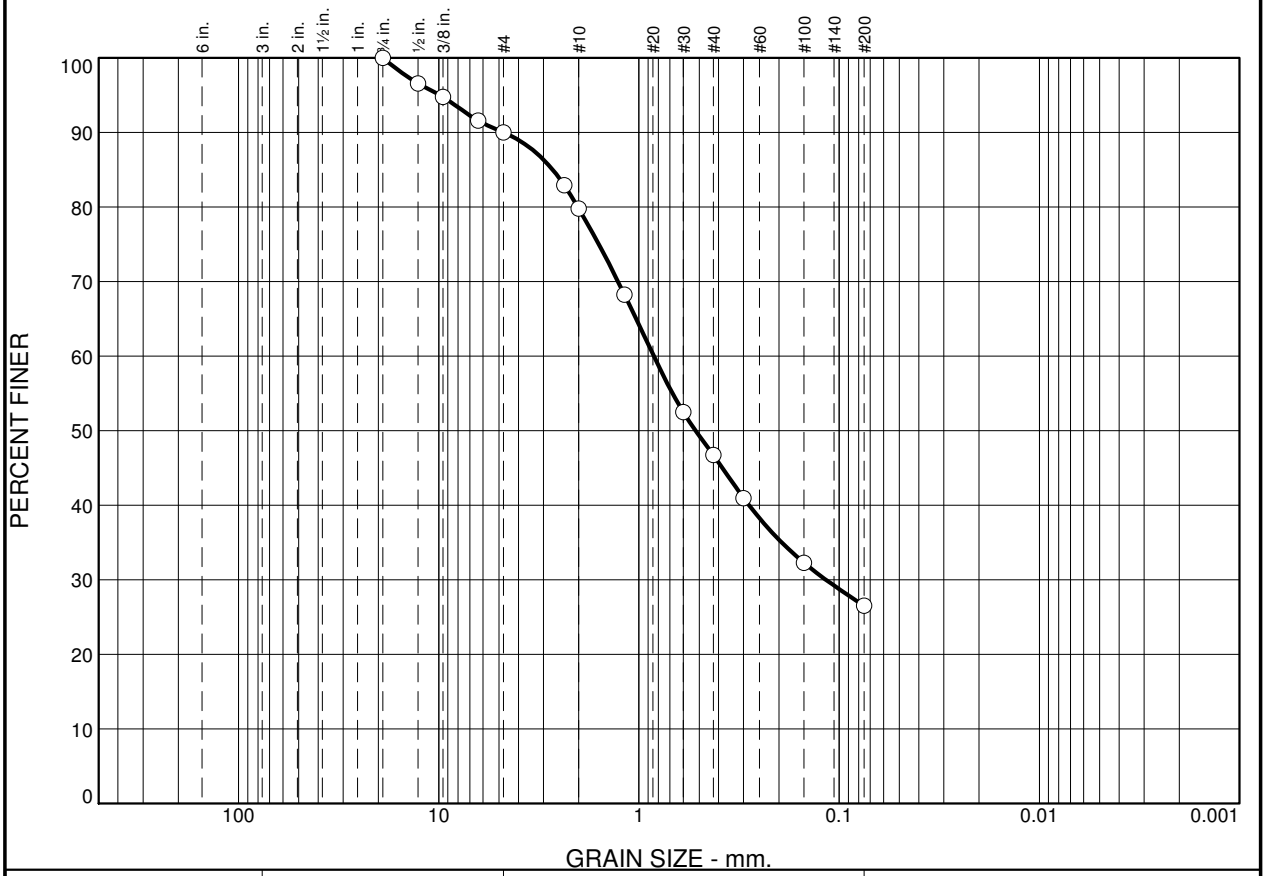
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1087

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	10	10	33	20	27	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	97		
3/8"	95		
1/4"	92		
#4	90		
#8	83		
#10	80		
#16	68		
#30	52		
#40	47		
#50	41		
#100	32		
#200	27		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 14 LL= 27 PI= 13

Coefficients

D_{90}= 4.7268 D_{85}= 2.6928 D_{60}= 0.8432
D_{50}= 0.5209 D_{30}= 0.1167 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

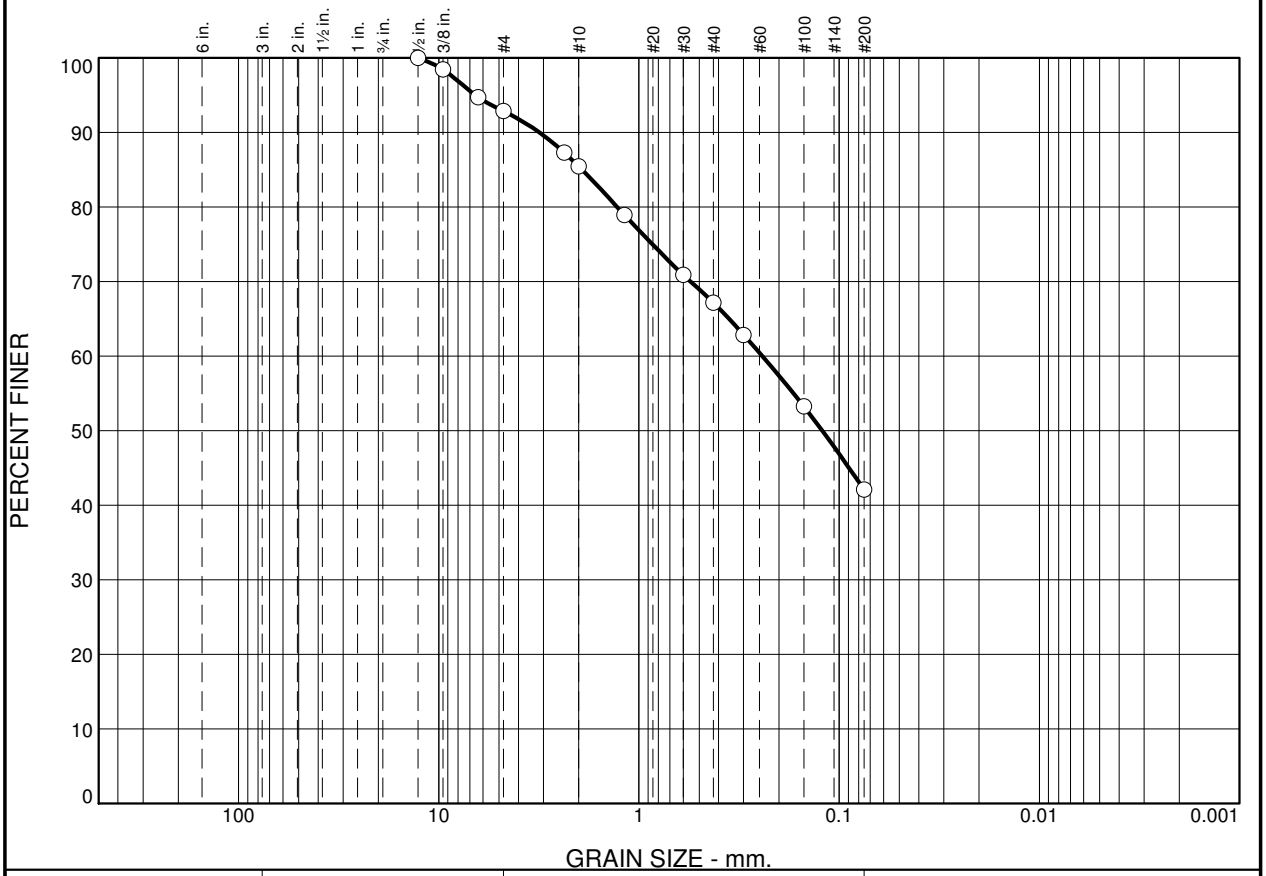
Location: B-34
Sample Number: 19L1088 **Depth:** 15-15.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1088

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	7	8	18	25	42	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	98		
1/4"	95		
#4	93		
#8	87		
#10	85		
#16	79		
#30	71		
#40	67		
#50	63		
#100	53		
#200	42		

* (no specification provided)

Soil Description

clayey sand

Atterberg Limits

PL= 14 LL= 25 PI= 11

Coefficients

D_{90}= 3.1441 D_{85}= 1.9251 D_{60}= 0.2418
D_{50}= 0.1216 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-6(1)

Remarks

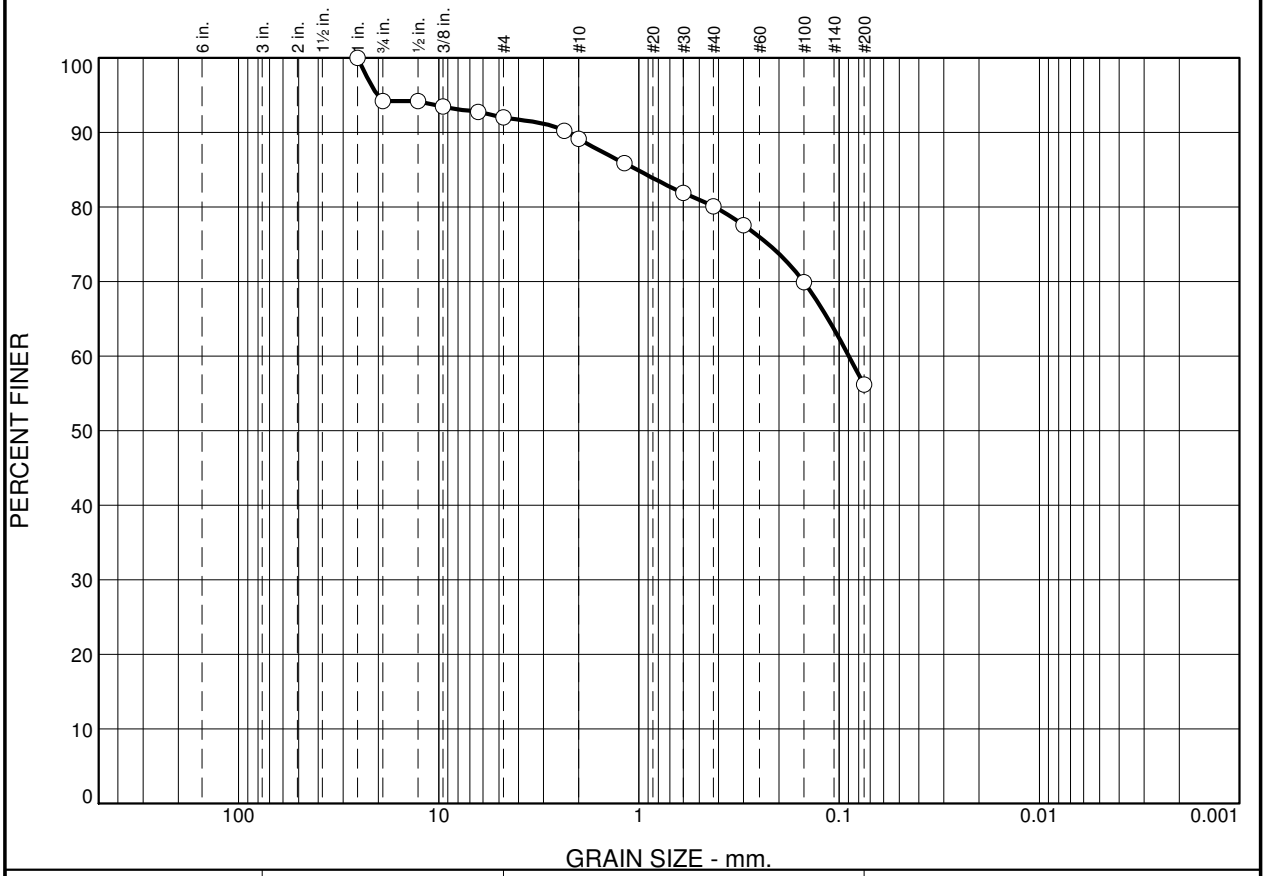
Location: B-29
Sample Number: 19L1089 **Depth:** 5-5.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1089

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	6	2	3	9	24	56	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	94		
1/2"	94		
3/8"	93		
1/4"	93		
#4	92		
#8	90		
#10	89		
#16	86		
#30	82		
#40	80		
#50	78		
#100	70		
#200	56		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 15 LL= 41 PI= 26

Coefficients

D_{90}= 2.2763 D_{85}= 1.0232 D_{60}= 0.0894
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(11)

Remarks

Location: B-29
Sample Number: 19L1090 **Depth:** 10-10.5' **Date:** 10-28-19

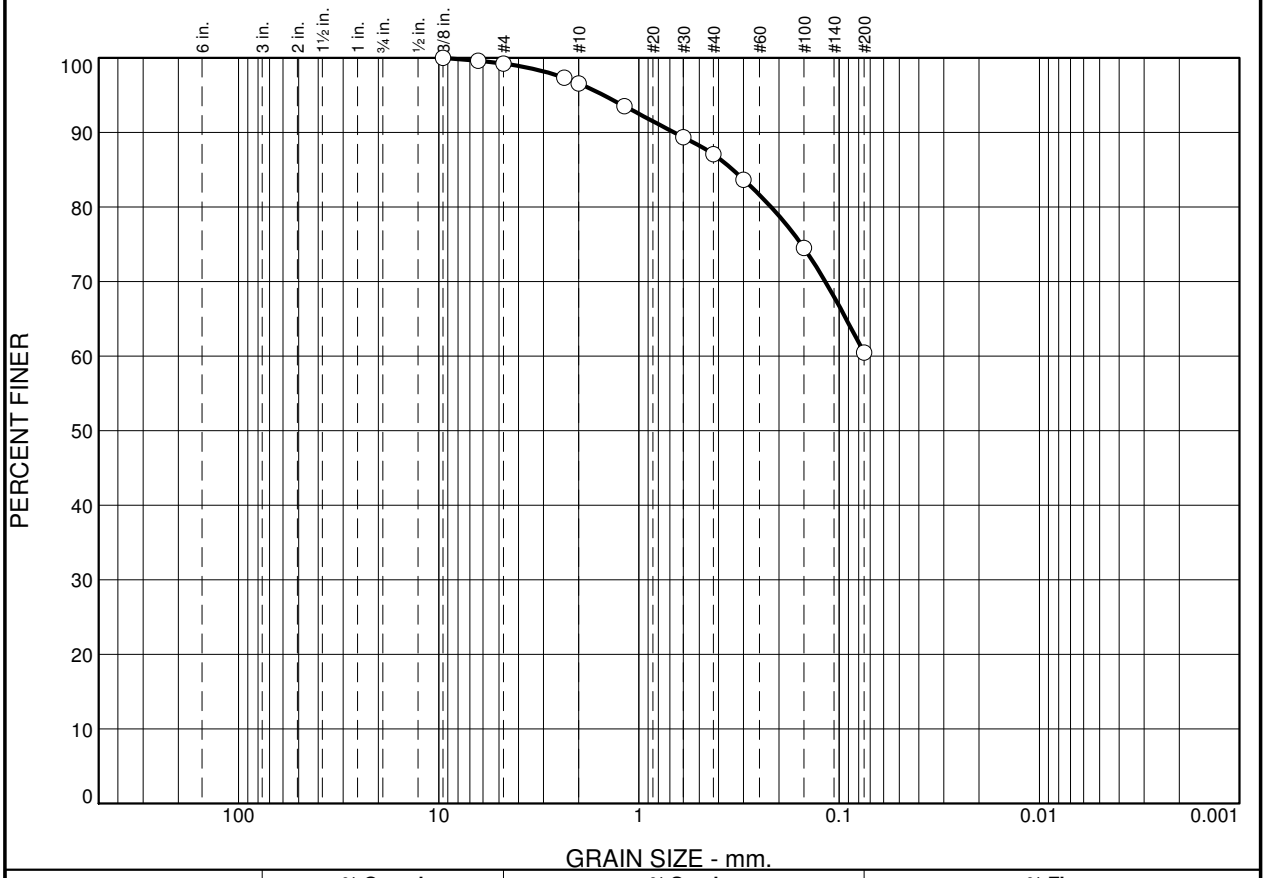
Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP

Project No: 19107 **Lab Number** 19L1090

Tested By: AJ **Checked By:** TT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	1	2	10	27	60	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100		
1/4"	100		
#4	99		
#8	97		
#10	97		
#16	94		
#30	89		
#40	87		
#50	84		
#100	75		
#200	60		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 17 LL= 39 PI= 22

Coefficients

D_{90}= 0.6679 D_{85}= 0.3405 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(10)

Remarks

Location: B-29
Sample Number: 19L1091 **Depth:** 15-15.5' **Date:** 10-28-19

Hoque & Associates, Inc.
4325 South 34th Street
Phoenix, Arizona 85040

Client: Jacobs
Project: APS Douglas former MGP
Project No: 19107 **Lab Number** 19L1091

Tested By: AJ **Checked By:** TT

HOQUE & ASSOCIATES

PROJECT:	APS Douglas former MGP	**CLIENT:**	Jacobs
LOCATION:	Douglas, AZ	**JOB NO:**	19107
MATERIAL:	SEE BELOW	**LAB NO:**	SEE BELOW
SAMPLE SOURCE:	SEE BELOW	**DATE SAMPLED:**	10/28/19

SPECIFIC GRAVITY OF SOILS (ASTM D854)

LAB NO	SAMPLE SOURCE	OVEN DRY SOIL (g)	FLASK & WATER (g)	WEIGHT OF FLASK, WATER & SOIL (g)	TEMP. (C)	SPECIFIC GRAVITY
19L1060	B-25 @ 7.5-8.0'	40.8	336.97	362.19	21	2.622
19L1063	B-25 @ 10-10.5'	45.8	336.97	365.50	19	2.654
19L1064	B-25 @ 20-20.5'	38.7	336.97	360.97	20	2.637
19L1065	B-25 @ 30-30.5'	46.0	335.24	363.68	21	2.624
19L1075	B-26 @ 5-5.5'	50.1	336.97	368.07	19	2.641
19L1076	B-26 @ 7.5-8.0'	50.0	336.60	368.00	20	2.686
19L1077	B-26 @ 10-10.5'	47.8	339.60	369.02	21	2.600
19L1079	B-26 @ 20-20.5'	47.2	336.97	366.55	19	2.684
19L1080	B-26 @ 30-30.5'	45.5	339.60	367.81	19	2.636
19L1082	B-27 @ 10-10.5'	46.3	335.24	364.01	20	2.646
19L1084	B-27 @ 20-20.5'	42.9	339.60	366.26	20	2.641

AASHTO R18

REVIEWED BY

Trent Titchenal
Lab Manager

Appendix G
Laboratory Analytical Reports

Analytical Report 641446

for

APS

Project Manager: Judy Heywood

APS MGP Douglas, AZ

D3118600.A.CS.EV.DG.05-1B

11.18.2019

Collected By: Client

4147 Greenbriar Dr.
Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

11.18.2019

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: XENCO Report No(s): **641446**
APS MGP Douglas, AZ
Project Address: Miami, AZ

Judy Heywood:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 641446. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 641446 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ruriko Konuma
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

CASE NARRATIVE

Client Name: APS

Project Name: APS MGP Douglas, AZ

Project ID: *D3118600.A.CS.EV.DG.0*
Work Order Number(s): *641446*

Report Date: *11.18.2019*
Date Received: *10.30.2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3105931 Volatiles by SW 8260C

Lab Sample ID 641446-029 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Bromomethane, Chloroethane recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Bromoform recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641446-014, -019, -029, -034, -037, -038, -039.
The Laboratory Control Sample for Bromomethane, Chloroethane, Bromoform is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106008 PAHs by 8270D SIM

Samples in work order 641446 were run at dilution due to the physical characteristics of the samples-dark and viscous.

Batch: LBA-3106011 PAHs by 8270D SIM

Acenaphthylene, Anthracene, Benzo(b)fluoranthene , Benzo(k)fluoranthene , Chrysene, Fluoranthene, Pyrene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 641446-022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038, -039, -040

Lab Sample ID 641446-029 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Anthracene, Benzo(b)fluoranthene , Benzo(k)fluoranthene , Chrysene, Fluoranthene, Pyrene recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641446-022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038, -039, -040.
The Laboratory Control Sample for Anthracene, Benzo(k)fluoranthene , Chrysene, Pyrene, Benzo(b)fluoranthene , Fluoranthene is within laboratory Control Limits, therefore the data was accepted.

Surrogate Terphenyl-D14 recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 641446-023.

Samples in work order 641446 were run at dilution due to the physical characteristics of the samples--dark and viscous.

Batch: LBA-3106129 Metals, RCRA List, by SW 6020

Lab Sample ID 641446-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Barium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641446-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -020.

The Laboratory Control Sample for Barium is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106155 Metals, RCRA List, by SW 6020

Lab Sample ID 641446-029 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Barium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Lead recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641446-021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038, -039, -040.

The Laboratory Control Sample for Barium, Lead is within laboratory Control Limits, therefore the data was accepted.

Flagging Criteria

Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Sample Cross Reference 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-B31-0-102719	S	10.27.2019 10:45		641446-001
D-B32-0-102719	S	10.27.2019 11:00		641446-002
D-B33-0-102719	S	10.27.2019 11:22		641446-003
D-B34-0-102719	S	10.27.2019 11:34		641446-004
D-B27-0-102719	S	10.27.2019 12:16		641446-005
D-B29-0-102719	S	10.27.2019 12:50		641446-006
D-B35-0-102719	S	10.27.2019 13:09		641446-007
D-B18-0-102719	S	10.27.2019 13:30		641446-008
D-B20-0-102719	S	10.27.2019 13:52		641446-009
D-FD01-102719	S	10.27.2019 14:00		641446-010
D-B28-0-102719	S	10.27.2019 14:58		641446-011
D-B22-0-102719	S	10.27.2019 15:06		641446-012
D-B19-0-102719	S	10.27.2019 15:36		641446-013
D-B25-0-102719	S	10.27.2019 15:50		641446-014
D-B21-0-102719	S	10.27.2019 16:26		641446-015
D-B23-0-102719	S	10.27.2019 16:40		641446-016
D-B16-0-102719	S	10.27.2019 17:12		641446-017
D-B17-0-102719	S	10.27.2019 17:38		641446-018
D-TB01-102719	S	10.27.2019 00:00		641446-019
D-B26-0-102719	S	10.28.2019 10:15		641446-020
D-B24-0-102719	S	10.28.2019 10:32		641446-021
D-B30-0-102719	S	10.28.2019 11:12		641446-022
D-B34-5.0-5.5-102819	S	10.28.2019 11:05	5 - 5.5 ft	641446-023
D-FD01-102819	S	10.28.2019 11:15		641446-024
D-B33-5.0'-5.5'	S	10.28.2019 11:50	5 - 5.5 ft	641446-025
D-B32-5.0-5.5	S	10.28.2019 13:55	5 - 5.5 ft	641446-026
B-FD02-102819	S	10.28.2019 14:05	5 - 5.5 ft	641446-027
D-B31-5.0-5.5	S	10.28.2019 14:25	5 - 5.5 ft	641446-028
D-B35-5.0-5.5	S	10.28.2019 16:40	5 - 5.5 ft	641446-029
D-B18-2.0-2.5	S	10.28.2019 17:10	2 - 2.5 ft	641446-030
D-B18-5.0-5.5	S	10.28.2019 17:15	5 - 2.5 ft	641446-031
D-FD03-102819	S	10.28.2019 17:20		641446-032
D-B18-7.0-7.5	S	10.28.2019 17:30	7 - 7.5 ft	641446-033
D-B14-1.0-1.5	S	10.29.2019 08:15	1 - 1.5 ft	641446-034
D-B14-2.5-3.0	S	10.29.2019 08:20	2.5 - 3 ft	641446-035
D-B14-5.0-5.5	S	10.29.2019 09:15	5 - 5.5 ft	641446-036
D-B16-2.5-3.0	S	10.29.2019 09:50	2.5 - 3 ft	641446-037
D-FD01-102919	S	10.29.2019 10:00		641446-038
D-B16-5.0-5.5	S	10.29.2019 10:05	5 - 5.5 ft	641446-039
D-B22-2.5-3.0	S	10.29.2019 10:15	2.5 - 3 ft	641446-040

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B31-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-001
Date Collected: 10.27.2019 10:45

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 10:25
Basis: Wet Weight
Seq Number: 3106077
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0211**	0.0175	mg/kg	10.31.2019 16:17		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 09:30
Basis: Wet Weight
Seq Number: 3106129
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.08**	1.92	mg/kg	10.31.2019 19:42		10
Barium	7440-39-3	**186**	3.85	mg/kg	10.31.2019 19:42		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	10.31.2019 19:42	U	10
Chromium	7440-47-3	**10.3**	3.85	mg/kg	10.31.2019 19:42		10
Lead	7439-92-1	**34.8**	1.92	mg/kg	10.31.2019 19:42		10
Selenium	7782-49-2	BRL	1.92	mg/kg	10.31.2019 19:42	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	10.31.2019 19:42	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B31-0-102719**
Lab Sample Id: 641446-001

Matrix: Soil
Date Collected: 10.27.2019 10:45

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:09

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	10.30.2019 19:09	U	10
Acenaphthylene	208-96-8	BRL	0.0167	mg/kg	10.30.2019 19:09	U	10
Anthracene	120-12-7	BRL	0.0167	mg/kg	10.30.2019 19:09	U	10
Benzo(a)anthracene	56-55-3	**0.0182**	0.0167	mg/kg	10.30.2019 19:09		10
Benzo(a)pyrene	50-32-8	**0.0216**	0.0167	mg/kg	10.30.2019 19:09		10
Benzo(b)fluoranthene	205-99-2	**0.0355**	0.0167	mg/kg	10.30.2019 19:09		10
Benzo(g,h,i)perylene	191-24-2	**0.0206**	0.0167	mg/kg	10.30.2019 19:09		10
Benzo(k)fluoranthene	207-08-9	BRL	0.0167	mg/kg	10.30.2019 19:09	U	10
Chrysene	218-01-9	**0.0242**	0.0167	mg/kg	10.30.2019 19:09		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	10.30.2019 19:09	U	10
Fluoranthene	206-44-0	**0.0413**	0.0167	mg/kg	10.30.2019 19:09		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	10.30.2019 19:09	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.0167	mg/kg	10.30.2019 19:09	U	10
Naphthalene	91-20-3	BRL	0.167	mg/kg	10.30.2019 19:09	U	10
Phenanthrene	85-01-8	**0.0169**	0.0167	mg/kg	10.30.2019 19:09		10
Pyrene	129-00-0	**0.0366**	0.0167	mg/kg	10.30.2019 19:09		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	71	%	31-130	10.30.2019 19:09	
2-Fluorobiphenyl	73	%	51-133	10.30.2019 19:09	
Terphenyl-D14	74	%	46-137	10.30.2019 19:09	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B32-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-002
Date Collected: 10.27.2019 11:00

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 10:25
Basis: Wet Weight
Seq Number: 3106077
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0294**	0.0179	mg/kg	10.31.2019 16:53		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 09:30
Basis: Wet Weight
Seq Number: 3106129
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.73**	2.00	mg/kg	10.31.2019 20:03		10
Barium	7440-39-3	**176**	4.00	mg/kg	10.31.2019 20:03		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	10.31.2019 20:03	U	10
Chromium	7440-47-3	**9.26**	4.00	mg/kg	10.31.2019 20:03		10
Lead	7439-92-1	**48.3**	2.00	mg/kg	10.31.2019 20:03		10
Selenium	7782-49-2	BRL	2.00	mg/kg	10.31.2019 20:03	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	10.31.2019 20:03	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B32-0-102719**
Lab Sample Id: 641446-002

Matrix: Soil
Date Collected: 10.27.2019 11:00

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:18

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	10.30.2019 19:26	U	10
Acenaphthylene	208-96-8	BRL	0.0167	mg/kg	10.30.2019 19:26	U	10
Anthracene	120-12-7	BRL	0.0167	mg/kg	10.30.2019 19:26	U	10
Benzo(a)anthracene	56-55-3	**0.0233**	0.0167	mg/kg	10.30.2019 19:26		10
Benzo(a)pyrene	50-32-8	**0.0319**	0.0167	mg/kg	10.30.2019 19:26		10
Benzo(b)fluoranthene	205-99-2	**0.0581**	0.0167	mg/kg	10.30.2019 19:26		10
Benzo(g,h,i)perylene	191-24-2	**0.0320**	0.0167	mg/kg	10.30.2019 19:26		10
Benzo(k)fluoranthene	207-08-9	BRL	0.0167	mg/kg	10.30.2019 19:26	U	10
Chrysene	218-01-9	**0.0342**	0.0167	mg/kg	10.30.2019 19:26		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	10.30.2019 19:26	U	10
Fluoranthene	206-44-0	**0.0580**	0.0167	mg/kg	10.30.2019 19:26		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	10.30.2019 19:26	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0258**	0.0167	mg/kg	10.30.2019 19:26		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	10.30.2019 19:26	U	10
Phenanthrene	85-01-8	**0.0183**	0.0167	mg/kg	10.30.2019 19:26		10
Pyrene	129-00-0	**0.0515**	0.0167	mg/kg	10.30.2019 19:26		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	76	%	31-130	10.30.2019 19:26	
2-Fluorobiphenyl	73	%	51-133	10.30.2019 19:26	
Terphenyl-D14	79	%	46-137	10.30.2019 19:26	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B33-0-102719**
Lab Sample Id: 641446-003
Matrix: Soil
Date Collected: 10.27.2019 11:22
Date Received:10.30.2019 10:00

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106077
Date Prep: 10.31.2019 10:25
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0289**	0.0196	mg/kg	10.31.2019 16:32		1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106129
Date Prep: 10.31.2019 09:30
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.47**	1.85	mg/kg	10.31.2019 20:05		10
Barium	7440-39-3	**149**	3.70	mg/kg	10.31.2019 20:05		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	10.31.2019 20:05	U	10
Chromium	7440-47-3	**8.64**	3.70	mg/kg	10.31.2019 20:05		10
Lead	7439-92-1	**29.7**	1.85	mg/kg	10.31.2019 20:05		10
Selenium	7782-49-2	BRL	1.85	mg/kg	10.31.2019 20:05	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	10.31.2019 20:05	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B33-0-102719**
Lab Sample Id: 641446-003

Matrix: Soil
Date Collected: 10.27.2019 11:22

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:21

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Acenaphthylene	208-96-8	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Anthracene	120-12-7	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Benzo(a)anthracene	56-55-3	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Benzo(a)pyrene	50-32-8	**0.00972**	0.00834	mg/kg	10.30.2019 19:42		5
Benzo(b)fluoranthene	205-99-2	**0.0184**	0.00834	mg/kg	10.30.2019 19:42		5
Benzo(g,h,i)perylene	191-24-2	**0.0102**	0.00834	mg/kg	10.30.2019 19:42		5
Benzo(k)fluoranthene	207-08-9	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Chrysene	218-01-9	**0.0113**	0.00834	mg/kg	10.30.2019 19:42		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Fluoranthene	206-44-0	**0.0192**	0.00834	mg/kg	10.30.2019 19:42		5
Fluorene	86-73-7	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Naphthalene	91-20-3	BRL	0.0834	mg/kg	10.30.2019 19:42	U	5
Phenanthrene	85-01-8	BRL	0.00834	mg/kg	10.30.2019 19:42	U	5
Pyrene	129-00-0	**0.0175**	0.00834	mg/kg	10.30.2019 19:42		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	64	%	31-130	10.30.2019 19:42	
2-Fluorobiphenyl	71	%	51-133	10.30.2019 19:42	
Terphenyl-D14	85	%	46-137	10.30.2019 19:42	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B34-0-102719** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-004 Date Collected: 10.27.2019 11:34

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 10:25 Basis: Wet Weight

Seq Number: 3106077 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0288**	0.0175	mg/kg	10.31.2019 16:34		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 09:30 Basis: Wet Weight

Seq Number: 3106129 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.3**	1.92	mg/kg	10.31.2019 20:08		10
Barium	7440-39-3	**208**	3.85	mg/kg	10.31.2019 20:08		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	10.31.2019 20:08	U	10
Chromium	7440-47-3	**11.0**	3.85	mg/kg	10.31.2019 20:08		10
Lead	7439-92-1	**41.3**	1.92	mg/kg	10.31.2019 20:08		10
Selenium	7782-49-2	BRL	1.92	mg/kg	10.31.2019 20:08	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	10.31.2019 20:08	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B34-0-102719**
Lab Sample Id: 641446-004

Matrix: Soil
Date Collected: 10.27.2019 11:34

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:24

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	10.30.2019 19:59	U	10
Acenaphthylene	208-96-8	BRL	0.0167	mg/kg	10.30.2019 19:59	U	10
Anthracene	120-12-7	BRL	0.0167	mg/kg	10.30.2019 19:59	U	10
Benzo(a)anthracene	56-55-3	**0.0335**	0.0167	mg/kg	10.30.2019 19:59		10
Benzo(a)pyrene	50-32-8	**0.0467**	0.0167	mg/kg	10.30.2019 19:59		10
Benzo(b)fluoranthene	205-99-2	**0.0888**	0.0167	mg/kg	10.30.2019 19:59		10
Benzo(g,h,i)perylene	191-24-2	**0.0371**	0.0167	mg/kg	10.30.2019 19:59		10
Benzo(k)fluoranthene	207-08-9	**0.0221**	0.0167	mg/kg	10.30.2019 19:59		10
Chrysene	218-01-9	**0.0504**	0.0167	mg/kg	10.30.2019 19:59		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	10.30.2019 19:59	U	10
Fluoranthene	206-44-0	**0.0847**	0.0167	mg/kg	10.30.2019 19:59		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	10.30.2019 19:59	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0323**	0.0167	mg/kg	10.30.2019 19:59		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	10.30.2019 19:59	U	10
Phenanthrene	85-01-8	**0.0273**	0.0167	mg/kg	10.30.2019 19:59		10
Pyrene	129-00-0	**0.0729**	0.0167	mg/kg	10.30.2019 19:59		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	77	%	31-130	10.30.2019 19:59	
2-Fluorobiphenyl	77	%	51-133	10.30.2019 19:59	
Terphenyl-D14	84	%	46-137	10.30.2019 19:59	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B27-0-102719** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-005 Date Collected: 10.27.2019 12:16

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 10:25 Basis: Wet Weight

Seq Number: 3106077 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0227**	0.0189	mg/kg	10.31.2019 16:36		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 09:30 Basis: Wet Weight

Seq Number: 3106129 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.9**	2.00	mg/kg	10.31.2019 20:11		10
Barium	7440-39-3	**70.5**	4.00	mg/kg	10.31.2019 20:11		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	10.31.2019 20:11	U	10
Chromium	7440-47-3	**8.01**	4.00	mg/kg	10.31.2019 20:11		10
Lead	7439-92-1	**16.1**	2.00	mg/kg	10.31.2019 20:11		10
Selenium	7782-49-2	BRL	2.00	mg/kg	10.31.2019 20:11	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	10.31.2019 20:11	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B27-0-102719**
Lab Sample Id: 641446-005

Matrix: Soil
Date Collected: 10.27.2019 12:16

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:27

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	10.30.2019 18:19	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	10.30.2019 18:19	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	10.30.2019 18:19	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	10.30.2019 18:19	U	1
Benzo(a)pyrene	50-32-8	**0.00210**	0.00166	mg/kg	10.30.2019 18:19		1
Benzo(b)fluoranthene	205-99-2	**0.00294**	0.00166	mg/kg	10.30.2019 18:19		1
Benzo(g,h,i)perylene	191-24-2	**0.00232**	0.00166	mg/kg	10.30.2019 18:19		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	10.30.2019 18:19	U	1
Chrysene	218-01-9	**0.00178**	0.00166	mg/kg	10.30.2019 18:19		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	10.30.2019 18:19	U	1
Fluoranthene	206-44-0	**0.00205**	0.00166	mg/kg	10.30.2019 18:19		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	10.30.2019 18:19	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00180**	0.00166	mg/kg	10.30.2019 18:19		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	10.30.2019 18:19	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	10.30.2019 18:19	U	1
Pyrene	129-00-0	**0.00275**	0.00166	mg/kg	10.30.2019 18:19		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	89	%	31-130	10.30.2019 18:19	
2-Fluorobiphenyl	92	%	51-133	10.30.2019 18:19	
Terphenyl-D14	95	%	46-137	10.30.2019 18:19	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B29-0-102719**
Lab Sample Id: 641446-006

Matrix: Soil
Date Collected: 10.27.2019 12:50

Date Received:10.30.2019 10:00

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106077

Date Prep: 10.31.2019 10:25

Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0574**	0.0167	mg/kg	10.31.2019 16:38		1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106129

Date Prep: 10.31.2019 09:30

Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.22**	1.82	mg/kg	10.31.2019 20:14		10
Barium	7440-39-3	**62.9**	3.64	mg/kg	10.31.2019 20:14		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	10.31.2019 20:14	U	10
Chromium	7440-47-3	**6.16**	3.64	mg/kg	10.31.2019 20:14		10
Lead	7439-92-1	**22.2**	1.82	mg/kg	10.31.2019 20:14		10
Selenium	7782-49-2	BRL	1.82	mg/kg	10.31.2019 20:14	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	10.31.2019 20:14	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B29-0-102719**
Lab Sample Id: 641446-006

Matrix: Soil
Date Collected: 10.27.2019 12:50

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:36

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00834	mg/kg	10.30.2019 20:16	U	5
Acenaphthylene	208-96-8	**0.0883**	0.00834	mg/kg	10.30.2019 20:16		5
Anthracene	120-12-7	**0.0726**	0.00834	mg/kg	10.30.2019 20:16		5
Benzo(a)anthracene	56-55-3	**0.287**	0.00834	mg/kg	10.30.2019 20:16		5
Benzo(a)pyrene	50-32-8	**0.392**	0.00834	mg/kg	10.30.2019 20:16		5
Benzo(b)fluoranthene	205-99-2	**0.456**	0.00834	mg/kg	10.30.2019 20:16		5
Benzo(g,h,i)perylene	191-24-2	**0.265**	0.00834	mg/kg	10.30.2019 20:16		5
Benzo(k)fluoranthene	207-08-9	**0.142**	0.00834	mg/kg	10.30.2019 20:16		5
Chrysene	218-01-9	**0.325**	0.00834	mg/kg	10.30.2019 20:16		5
Dibenz(a,h)Anthracene	53-70-3	**0.0450**	0.00834	mg/kg	10.30.2019 20:16		5
Fluoranthene	206-44-0	**0.603**	0.00834	mg/kg	10.30.2019 20:16		5
Fluorene	86-73-7	**0.0405**	0.00834	mg/kg	10.30.2019 20:16		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.218**	0.00834	mg/kg	10.30.2019 20:16		5
Naphthalene	91-20-3	BRL	0.0834	mg/kg	10.30.2019 20:16	U	5
Phenanthrene	85-01-8	**0.641**	0.00834	mg/kg	10.30.2019 20:16		5
Pyrene	129-00-0	**0.750**	0.00834	mg/kg	10.30.2019 20:16		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	60	%	31-130	10.30.2019 20:16	
2-Fluorobiphenyl	72	%	51-133	10.30.2019 20:16	
Terphenyl-D14	92	%	46-137	10.30.2019 20:16	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B35-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-007
Date Collected: 10.27.2019 13:09

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 10:25
Basis: Wet Weight
Seq Number: 3106077
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0268**	0.0172	mg/kg	10.31.2019 16:40		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 09:30
Basis: Wet Weight
Seq Number: 3106129
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.69**	1.89	mg/kg	10.31.2019 20:17		10
Barium	7440-39-3	**181**	3.77	mg/kg	10.31.2019 20:17		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	10.31.2019 20:17	U	10
Chromium	7440-47-3	**10.1**	3.77	mg/kg	10.31.2019 20:17		10
Lead	7439-92-1	**30.3**	1.89	mg/kg	10.31.2019 20:17		10
Selenium	7782-49-2	BRL	1.89	mg/kg	10.31.2019 20:17	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	10.31.2019 20:17	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B35-0-102719**
Lab Sample Id: 641446-007

Matrix: Soil
Date Collected: 10.27.2019 13:09

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:39

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	10.30.2019 20:33	U	10
Acenaphthylene	208-96-8	BRL	0.0167	mg/kg	10.30.2019 20:33	U	10
Anthracene	120-12-7	BRL	0.0167	mg/kg	10.30.2019 20:33	U	10
Benzo(a)anthracene	56-55-3	**0.0211**	0.0167	mg/kg	10.30.2019 20:33		10
Benzo(a)pyrene	50-32-8	**0.0285**	0.0167	mg/kg	10.30.2019 20:33		10
Benzo(b)fluoranthene	205-99-2	**0.0541**	0.0167	mg/kg	10.30.2019 20:33		10
Benzo(g,h,i)perylene	191-24-2	**0.0247**	0.0167	mg/kg	10.30.2019 20:33		10
Benzo(k)fluoranthene	207-08-9	BRL	0.0167	mg/kg	10.30.2019 20:33	U	10
Chrysene	218-01-9	**0.0311**	0.0167	mg/kg	10.30.2019 20:33		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	10.30.2019 20:33	U	10
Fluoranthene	206-44-0	**0.0513**	0.0167	mg/kg	10.30.2019 20:33		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	10.30.2019 20:33	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0191**	0.0167	mg/kg	10.30.2019 20:33		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	10.30.2019 20:33	U	10
Phenanthrene	85-01-8	BRL	0.0167	mg/kg	10.30.2019 20:33	U	10
Pyrene	129-00-0	**0.0442**	0.0167	mg/kg	10.30.2019 20:33		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	58	%	31-130	10.30.2019 20:33	
2-Fluorobiphenyl	60	%	51-133	10.30.2019 20:33	
Terphenyl-D14	71	%	46-137	10.30.2019 20:33	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B18-0-102719**
Lab Sample Id: 641446-008
Matrix: Soil
Date Collected: 10.27.2019 13:30
Date Received:10.30.2019 10:00

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106077
Date Prep: 10.31.2019 10:25
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0202**	0.0169	mg/kg	10.31.2019 16:42		1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106129
Date Prep: 10.31.2019 09:30
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.70**	1.89	mg/kg	10.31.2019 20:20		10
Barium	7440-39-3	**148**	3.77	mg/kg	10.31.2019 20:20		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	10.31.2019 20:20	U	10
Chromium	7440-47-3	**10.0**	3.77	mg/kg	10.31.2019 20:20		10
Lead	7439-92-1	**25.5**	1.89	mg/kg	10.31.2019 20:20		10
Selenium	7782-49-2	BRL	1.89	mg/kg	10.31.2019 20:20	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	10.31.2019 20:20	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B18-0-102719**
Lab Sample Id: 641446-008

Matrix: Soil
Date Collected: 10.27.2019 13:30

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:42

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00834	mg/kg	10.30.2019 20:49	U	5
Acenaphthylene	208-96-8	BRL	0.00834	mg/kg	10.30.2019 20:49	U	5
Anthracene	120-12-7	**0.00960**	0.00834	mg/kg	10.30.2019 20:49		5
Benzo(a)anthracene	56-55-3	**0.0425**	0.00834	mg/kg	10.30.2019 20:49		5
Benzo(a)pyrene	50-32-8	**0.0583**	0.00834	mg/kg	10.30.2019 20:49		5
Benzo(b)fluoranthene	205-99-2	**0.0912**	0.00834	mg/kg	10.30.2019 20:49		5
Benzo(g,h,i)perylene	191-24-2	**0.0386**	0.00834	mg/kg	10.30.2019 20:49		5
Benzo(k)fluoranthene	207-08-9	**0.0261**	0.00834	mg/kg	10.30.2019 20:49		5
Chrysene	218-01-9	**0.0591**	0.00834	mg/kg	10.30.2019 20:49		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00834	mg/kg	10.30.2019 20:49	U	5
Fluoranthene	206-44-0	**0.112**	0.00834	mg/kg	10.30.2019 20:49		5
Fluorene	86-73-7	BRL	0.00834	mg/kg	10.30.2019 20:49	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0326**	0.00834	mg/kg	10.30.2019 20:49		5
Naphthalene	91-20-3	BRL	0.0834	mg/kg	10.30.2019 20:49	U	5
Phenanthrene	85-01-8	**0.0570**	0.00834	mg/kg	10.30.2019 20:49		5
Pyrene	129-00-0	**0.100**	0.00834	mg/kg	10.30.2019 20:49		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	85	%	31-130	10.30.2019 20:49	
2-Fluorobiphenyl	93	%	51-133	10.30.2019 20:49	
Terphenyl-D14	108	%	46-137	10.30.2019 20:49	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B20-0-102719** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-009 Date Collected: 10.27.2019 13:52

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 10:25 Basis: Wet Weight

Seq Number: 3106077 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0391**	0.0175	mg/kg	10.31.2019 16:47		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 09:30 Basis: Wet Weight

Seq Number: 3106129 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.4**	1.85	mg/kg	10.31.2019 20:23		10
Barium	7440-39-3	**166**	3.70	mg/kg	10.31.2019 20:23		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	10.31.2019 20:23	U	10
Chromium	7440-47-3	**7.89**	3.70	mg/kg	10.31.2019 20:23		10
Lead	7439-92-1	**29.7**	1.85	mg/kg	10.31.2019 20:23		10
Selenium	7782-49-2	BRL	1.85	mg/kg	10.31.2019 20:23	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	10.31.2019 20:23	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B20-0-102719**
Lab Sample Id: 641446-009

Matrix: Soil
Date Collected: 10.27.2019 13:52

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:45

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	10.30.2019 21:06	U	1
Acenaphthylene	208-96-8	**0.0391**	0.00167	mg/kg	10.30.2019 21:06		1
Anthracene	120-12-7	**0.0281**	0.00167	mg/kg	10.30.2019 21:06		1
Benzo(a)anthracene	56-55-3	**0.129**	0.00167	mg/kg	10.30.2019 21:06		1
Benzo(a)pyrene	50-32-8	**0.230**	0.00167	mg/kg	10.30.2019 21:06		1
Benzo(b)fluoranthene	205-99-2	**0.286**	0.00167	mg/kg	10.30.2019 21:06		1
Benzo(g,h,i)perylene	191-24-2	**0.190**	0.00167	mg/kg	10.30.2019 21:06		1
Benzo(k)fluoranthene	207-08-9	**0.0737**	0.00167	mg/kg	10.30.2019 21:06		1
Chrysene	218-01-9	**0.170**	0.00167	mg/kg	10.30.2019 21:06		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	10.30.2019 21:06	U	1
Fluoranthene	206-44-0	**0.419**	0.00834	mg/kg	10.31.2019 10:42	D	5
Fluorene	86-73-7	**0.00455**	0.00167	mg/kg	10.30.2019 21:06		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.146**	0.00167	mg/kg	10.30.2019 21:06		1
Naphthalene	91-20-3	**0.0238**	0.0167	mg/kg	10.30.2019 21:06		1
Phenanthrene	85-01-8	**0.170**	0.00167	mg/kg	10.30.2019 21:06		1
Pyrene	129-00-0	**0.516**	0.00834	mg/kg	10.31.2019 10:42	D	5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	84	%	31-130	10.30.2019 21:06	
2-Fluorobiphenyl	88	%	51-133	10.30.2019 21:06	
Terphenyl-D14	100	%	46-137	10.30.2019 21:06	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102719** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-010 Date Collected: 10.27.2019 14:00

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 10:25 Basis: Wet Weight

Seq Number: 3106077 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0357**	0.0175	mg/kg	10.31.2019 16:49		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 09:30 Basis: Wet Weight

Seq Number: 3106129 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.7**	1.89	mg/kg	10.31.2019 20:26		10
Barium	7440-39-3	**218**	3.77	mg/kg	10.31.2019 20:26		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	10.31.2019 20:26	U	10
Chromium	7440-47-3	**12.0**	3.77	mg/kg	10.31.2019 20:26		10
Lead	7439-92-1	**42.5**	1.89	mg/kg	10.31.2019 20:26		10
Selenium	7782-49-2	BRL	1.89	mg/kg	10.31.2019 20:26	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	10.31.2019 20:26	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102719**
Lab Sample Id: 641446-010

Matrix: Soil
Date Collected: 10.27.2019 14:00

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:48

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	10.30.2019 21:23	U	1
Acenaphthylene	208-96-8	**0.0484**	0.00166	mg/kg	10.30.2019 21:23		1
Anthracene	120-12-7	**0.0397**	0.00166	mg/kg	10.30.2019 21:23		1
Benzo(a)anthracene	56-55-3	**0.176**	0.00166	mg/kg	10.30.2019 21:23		1
Benzo(a)pyrene	50-32-8	**0.309**	0.00166	mg/kg	10.30.2019 21:23		1
Benzo(b)fluoranthene	205-99-2	**0.400**	0.00831	mg/kg	10.31.2019 10:58	D	5
Benzo(g,h,i)perylene	191-24-2	**0.229**	0.00166	mg/kg	10.30.2019 21:23		1
Benzo(k)fluoranthene	207-08-9	**0.105**	0.00166	mg/kg	10.30.2019 21:23		1
Chrysene	218-01-9	**0.233**	0.00166	mg/kg	10.30.2019 21:23		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	10.30.2019 21:23	U	1
Fluoranthene	206-44-0	**0.539**	0.00831	mg/kg	10.31.2019 10:58	D	5
Fluorene	86-73-7	**0.00524**	0.00166	mg/kg	10.30.2019 21:23		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.181**	0.00166	mg/kg	10.30.2019 21:23		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	10.30.2019 21:23	U	1
Phenanthrene	85-01-8	**0.183**	0.00166	mg/kg	10.30.2019 21:23		1
Pyrene	129-00-0	**0.681**	0.00831	mg/kg	10.31.2019 10:58	D	5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	87	%	31-130	10.30.2019 21:23	
2-Fluorobiphenyl	92	%	51-133	10.30.2019 21:23	
Terphenyl-D14	106	%	46-137	10.30.2019 21:23	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B28-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-011
Date Collected: 10.27.2019 14:58

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 10:25
Basis: Wet Weight
Seq Number: 3106077
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0513**	0.0189	mg/kg	10.31.2019 16:51		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 09:30
Basis: Wet Weight
Seq Number: 3106129
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.02**	1.96	mg/kg	10.31.2019 20:29		10
Barium	7440-39-3	**93.7**	3.92	mg/kg	10.31.2019 20:29		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	10.31.2019 20:29	U	10
Chromium	7440-47-3	**6.96**	3.92	mg/kg	10.31.2019 20:29		10
Lead	7439-92-1	**45.9**	1.96	mg/kg	10.31.2019 20:29		10
Selenium	7782-49-2	BRL	1.96	mg/kg	10.31.2019 20:29	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	10.31.2019 20:29	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B28-0-102719**
Lab Sample Id: 641446-011

Matrix: Soil
Date Collected: 10.27.2019 14:58

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:51

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	10.30.2019 21:40	U	10
Acenaphthylene	208-96-8	BRL	0.0167	mg/kg	10.30.2019 21:40	U	10
Anthracene	120-12-7	**0.0206**	0.0167	mg/kg	10.30.2019 21:40		10
Benzo(a)anthracene	56-55-3	**0.0999**	0.0167	mg/kg	10.30.2019 21:40		10
Benzo(a)pyrene	50-32-8	**0.116**	0.0167	mg/kg	10.30.2019 21:40		10
Benzo(b)fluoranthene	205-99-2	**0.191**	0.0167	mg/kg	10.30.2019 21:40		10
Benzo(g,h,i)perylene	191-24-2	**0.0595**	0.0167	mg/kg	10.30.2019 21:40		10
Benzo(k)fluoranthene	207-08-9	**0.0510**	0.0167	mg/kg	10.30.2019 21:40		10
Chrysene	218-01-9	**0.120**	0.0167	mg/kg	10.30.2019 21:40		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	10.30.2019 21:40	U	10
Fluoranthene	206-44-0	**0.199**	0.0167	mg/kg	10.30.2019 21:40		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	10.30.2019 21:40	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0564**	0.0167	mg/kg	10.30.2019 21:40		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	10.30.2019 21:40	U	10
Phenanthrene	85-01-8	**0.0929**	0.0167	mg/kg	10.30.2019 21:40		10
Pyrene	129-00-0	**0.179**	0.0167	mg/kg	10.30.2019 21:40		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	82	%	31-130	10.30.2019 21:40	
2-Fluorobiphenyl	82	%	51-133	10.30.2019 21:40	
Terphenyl-D14	98	%	46-137	10.30.2019 21:40	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B22-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-012
Date Collected: 10.27.2019 15:06

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 10:25
Basis: Wet Weight
Seq Number: 3106077
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0734**	0.0185	mg/kg	10.31.2019 17:02		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 09:30
Basis: Wet Weight
Seq Number: 3106129
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.18**	1.92	mg/kg	10.31.2019 20:38		10
Barium	7440-39-3	**111**	3.85	mg/kg	10.31.2019 20:38		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	10.31.2019 20:38	U	10
Chromium	7440-47-3	**9.80**	3.85	mg/kg	10.31.2019 20:38		10
Lead	7439-92-1	**50.1**	1.92	mg/kg	10.31.2019 20:38		10
Selenium	7782-49-2	BRL	1.92	mg/kg	10.31.2019 20:38	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	10.31.2019 20:38	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B22-0-102719**
Lab Sample Id: 641446-012

Matrix: Soil
Date Collected: 10.27.2019 15:06

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:54

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00832	mg/kg	10.30.2019 21:56	U	5
Acenaphthylene	208-96-8	**0.0239**	0.00832	mg/kg	10.30.2019 21:56		5
Anthracene	120-12-7	**0.0228**	0.00832	mg/kg	10.30.2019 21:56		5
Benzo(a)anthracene	56-55-3	**0.0688**	0.00832	mg/kg	10.30.2019 21:56		5
Benzo(a)pyrene	50-32-8	**0.101**	0.00832	mg/kg	10.30.2019 21:56		5
Benzo(b)fluoranthene	205-99-2	**0.154**	0.00832	mg/kg	10.30.2019 21:56		5
Benzo(g,h,i)perylene	191-24-2	**0.0664**	0.00832	mg/kg	10.30.2019 21:56		5
Benzo(k)fluoranthene	207-08-9	**0.0454**	0.00832	mg/kg	10.30.2019 21:56		5
Chrysene	218-01-9	**0.0859**	0.00832	mg/kg	10.30.2019 21:56		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00832	mg/kg	10.30.2019 21:56	U	5
Fluoranthene	206-44-0	**0.169**	0.00832	mg/kg	10.30.2019 21:56		5
Fluorene	86-73-7	BRL	0.00832	mg/kg	10.30.2019 21:56	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0522**	0.00832	mg/kg	10.30.2019 21:56		5
Naphthalene	91-20-3	BRL	0.0832	mg/kg	10.30.2019 21:56	U	5
Phenanthrene	85-01-8	**0.0945**	0.00832	mg/kg	10.30.2019 21:56		5
Pyrene	129-00-0	**0.180**	0.00832	mg/kg	10.30.2019 21:56		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	92	%	31-130	10.30.2019 21:56	
2-Fluorobiphenyl	89	%	51-133	10.30.2019 21:56	
Terphenyl-D14	95	%	46-137	10.30.2019 21:56	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B19-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-013
Date Collected: 10.27.2019 15:36

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 09:15
Basis: Wet Weight
Seq Number: 3106083
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0190**	0.0172	mg/kg	10.31.2019 15:19		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 09:30
Basis: Wet Weight
Seq Number: 3106129
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.73**	1.92	mg/kg	10.31.2019 20:41		10
Barium	7440-39-3	**181**	3.85	mg/kg	10.31.2019 20:41		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	10.31.2019 20:41	U	10
Chromium	7440-47-3	**9.16**	3.85	mg/kg	10.31.2019 20:41		10
Lead	7439-92-1	**29.7**	1.92	mg/kg	10.31.2019 20:41		10
Selenium	7782-49-2	BRL	1.92	mg/kg	10.31.2019 20:41	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	10.31.2019 20:41	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B19-0-102719**
Lab Sample Id: 641446-013

Matrix: Soil
Date Collected: 10.27.2019 15:36

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 10:57

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00334	mg/kg	10.30.2019 22:13	U	2
Acenaphthylene	208-96-8	**0.00470**	0.00334	mg/kg	10.30.2019 22:13		2
Anthracene	120-12-7	**0.00577**	0.00334	mg/kg	10.30.2019 22:13		2
Benzo(a)anthracene	56-55-3	**0.0204**	0.00334	mg/kg	10.30.2019 22:13		2
Benzo(a)pyrene	50-32-8	**0.0322**	0.00334	mg/kg	10.30.2019 22:13		2
Benzo(b)fluoranthene	205-99-2	**0.0594**	0.00334	mg/kg	10.30.2019 22:13		2
Benzo(g,h,i)perylene	191-24-2	**0.0200**	0.00334	mg/kg	10.30.2019 22:13		2
Benzo(k)fluoranthene	207-08-9	**0.0159**	0.00334	mg/kg	10.30.2019 22:13		2
Chrysene	218-01-9	**0.0320**	0.00334	mg/kg	10.30.2019 22:13		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00334	mg/kg	10.30.2019 22:13	U	2
Fluoranthene	206-44-0	**0.0600**	0.00334	mg/kg	10.30.2019 22:13		2
Fluorene	86-73-7	BRL	0.00334	mg/kg	10.30.2019 22:13	U	2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0176**	0.00334	mg/kg	10.30.2019 22:13		2
Naphthalene	91-20-3	BRL	0.0334	mg/kg	10.30.2019 22:13	U	2
Phenanthrene	85-01-8	**0.0269**	0.00334	mg/kg	10.30.2019 22:13		2
Pyrene	129-00-0	**0.0598**	0.00334	mg/kg	10.30.2019 22:13		2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	87	%	31-130	10.30.2019 22:13	
2-Fluorobiphenyl	97	%	51-133	10.30.2019 22:13	
Terphenyl-D14	108	%	46-137	10.30.2019 22:13	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B25-0-102719** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-014 Date Collected: 10.27.2019 15:50

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P

Tech: KCS % Moisture:

Analyst: KCS Date Prep: 11.01.2019 14:00 Basis: Wet Weight

Seq Number: 3106209 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.0635**	0.0583	mg/kg	11.01.2019 15:46		1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 09:15 Basis: Wet Weight

Seq Number: 3106083 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0461**	0.0196	mg/kg	10.31.2019 15:21		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 09:30 Basis: Wet Weight

Seq Number: 3106129 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**10.9**	1.92	mg/kg	10.31.2019 20:44		10
Barium	7440-39-3	**175**	3.85	mg/kg	10.31.2019 20:44		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	10.31.2019 20:44	U	10
Chromium	7440-47-3	**9.85**	3.85	mg/kg	10.31.2019 20:44		10
Lead	7439-92-1	**57.5**	1.92	mg/kg	10.31.2019 20:44		10
Selenium	7782-49-2	BRL	1.92	mg/kg	10.31.2019 20:44	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	10.31.2019 20:44	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B25-0-102719** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-014 Date Collected: 10.27.2019 15:50

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106060

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	10.31.2019 10:51		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.38**		SU	10.31.2019 12:25		1
Temperature	TEMP	**21.6**		Deg C	10.31.2019 12:25	+	1

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B25-0-102719**
Lab Sample Id: 641446-014

Matrix: Soil
Date Collected: 10.27.2019 15:50

Date Received:10.30.2019 10:00

Analytical Method: PCBs by SW 8082A
Tech: JOZ
Analyst: SHM
Seq Number: 3106146

Date Prep: 10.31.2019 09:48

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0167	mg/kg	11.01.2019 10:49	U	1
PCB-1221	11104-28-2	BRL	0.0167	mg/kg	11.01.2019 10:49	U	1
PCB-1232	11141-16-5	BRL	0.0167	mg/kg	11.01.2019 10:49	U	1
PCB-1242	53469-21-9	BRL	0.0167	mg/kg	11.01.2019 10:49	U	1
PCB-1248	12672-29-6	BRL	0.0167	mg/kg	11.01.2019 10:49	U	1
PCB-1254	11097-69-1	BRL	0.0167	mg/kg	11.01.2019 10:49	U	1
PCB-1260	11096-82-5	BRL	0.0167	mg/kg	11.01.2019 10:49	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	81	%	39-125	11.01.2019 10:49	
Tetrachloro-m-xylene	65	%	37-124	11.01.2019 10:49	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B25-0-102719**
Lab Sample Id: 641446-014

Matrix: Soil
Date Collected: 10.27.2019 15:50

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 11:00

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00832	mg/kg	10.30.2019 22:30	U	5
Acenaphthylene	208-96-8	**0.102**	0.00832	mg/kg	10.30.2019 22:30		5
Anthracene	120-12-7	**0.0934**	0.00832	mg/kg	10.30.2019 22:30		5
Benzo(a)anthracene	56-55-3	**0.372**	0.00832	mg/kg	10.30.2019 22:30		5
Benzo(a)pyrene	50-32-8	**0.626**	0.00832	mg/kg	10.30.2019 22:30		5
Benzo(b)fluoranthene	205-99-2	**0.840**	0.00832	mg/kg	10.30.2019 22:30		5
Benzo(g,h,i)perylene	191-24-2	**0.449**	0.00832	mg/kg	10.30.2019 22:30		5
Benzo(k)fluoranthene	207-08-9	**0.223**	0.00832	mg/kg	10.30.2019 22:30		5
Chrysene	218-01-9	**0.469**	0.00832	mg/kg	10.30.2019 22:30		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00832	mg/kg	10.30.2019 22:30	U	5
Fluoranthene	206-44-0	**1.01**	0.00832	mg/kg	10.30.2019 22:30		5
Fluorene	86-73-7	**0.0145**	0.00832	mg/kg	10.30.2019 22:30		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.346**	0.00832	mg/kg	10.30.2019 22:30		5
Naphthalene	91-20-3	BRL	0.0832	mg/kg	10.30.2019 22:30	U	5
Phenanthrene	85-01-8	**0.493**	0.00832	mg/kg	10.30.2019 22:30		5
Pyrene	129-00-0	**1.23**	0.00832	mg/kg	10.30.2019 22:30		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	83	%	31-130	10.30.2019 22:30	
2-Fluorobiphenyl	95	%	51-133	10.30.2019 22:30	
Terphenyl-D14	112	%	46-137	10.30.2019 22:30	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B25-0-102719**
Lab Sample Id: 641446-014

Matrix: Soil
Date Collected: 10.27.2019 15:50

Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,1-Dichloroethane	75-34-3	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,1-Dichloroethene	75-35-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,1-Dichloropropene	563-58-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2-Dibromoethane	106-93-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2-Dichloroethane	107-06-2	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,2-Dichloropropane	78-87-5	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,3-Dichloropropane	142-28-9	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
2,2-Dichloropropane	594-20-7	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
2-Butanone	78-93-3	BRL	1.26	mg/kg	10.30.2019 18:26	U	50
2-Chlorotoluene	95-49-8	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
2-Hexanone	591-78-6	BRL	3.14	mg/kg	10.30.2019 18:26	U	50
4-Chlorotoluene	106-43-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	3.14	mg/kg	10.30.2019 18:26	U	50
Acetone	67-64-1	BRL	6.28	mg/kg	10.30.2019 18:26	U	50
Benzene	71-43-2	BRL	0.0628	mg/kg	10.30.2019 18:26	U	50
Bromobenzene	108-86-1	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Bromochloromethane	74-97-5	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Bromodichloromethane	75-27-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Bromoform	75-25-2	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Bromomethane	74-83-9	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Carbon Disulfide	75-15-0	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Carbon Tetrachloride	56-23-5	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Chlorobenzene	108-90-7	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Chloroethane	75-00-3	BRL	0.628	mg/kg	10.30.2019 18:26	U	50
Chloroform	67-66-3	BRL	0.314	mg/kg	10.30.2019 18:26	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B25-0-102719**
Lab Sample Id: 641446-014

Matrix: Soil
Date Collected: 10.27.2019 15:50

Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Dibromochloromethane	124-48-1	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Dibromomethane	74-95-3	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Ethylbenzene	100-41-4	BRL	0.0628	mg/kg	10.30.2019 18:26	U	50
Hexachlorobutadiene	87-68-3	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.26	mg/kg	10.30.2019 18:26	U	50
Isopropylbenzene	98-82-8	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
m,p-Xylenes	179601-23-1	BRL	0.126	mg/kg	10.30.2019 18:26	U	50
Methylene Chloride	75-09-2	BRL	1.26	mg/kg	10.30.2019 18:26	U	50
MTBE	1634-04-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Naphthalene	91-20-3	BRL	0.628	mg/kg	10.30.2019 18:26	U	50
n-Butylbenzene	104-51-8	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
n-Propylbenzene	103-65-1	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
o-Xylene	95-47-6	BRL	0.0628	mg/kg	10.30.2019 18:26	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Sec-Butylbenzene	135-98-8	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Styrene	100-42-5	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
tert-Butylbenzene	98-06-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Tetrachloroethylene	127-18-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Toluene	108-88-3	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Total Xylenes	1330-20-7	BRL	0.0628	mg/kg	10.30.2019 18:26	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Trichloroethene	79-01-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Trichlorofluoromethane	75-69-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Vinyl Acetate	108-05-4	BRL	0.628	mg/kg	10.30.2019 18:26	U	50
Vinyl Chloride	75-01-4	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
1,3-Butadiene	106-99-0	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Cyclohexane	110-82-7	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Dicyclopentadiene	77-73-6	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Methylcyclohexane	108-87-2	BRL	0.628	mg/kg	10.30.2019 18:26	U	50
n-Hexane	110-54-3	BRL	0.628	mg/kg	10.30.2019 18:26	U	50
4-Ethyltoluene	622-96-8	BRL	0.314	mg/kg	10.30.2019 18:26	U	50
Propene	115-07-1	BRL	0.314	mg/kg	10.30.2019 18:26	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B25-0-102719**
Lab Sample Id: 641446-014

Matrix: Soil
Date Collected: 10.27.2019 15:50

Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	90	%	53-142	10.30.2019 18:26	
1,2-Dichloroethane-D4	102	%	56-150	10.30.2019 18:26	
Toluene-D8	103	%	70-130	10.30.2019 18:26	
4-Bromofluorobenzene	99	%	68-152	10.30.2019 18:26	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-015
Date Collected: 10.27.2019 16:26

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 09:15
Basis: Wet Weight
Seq Number: 3106083
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0309**	0.0172	mg/kg	10.31.2019 15:23		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 09:30
Basis: Wet Weight
Seq Number: 3106129
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.38**	1.89	mg/kg	10.31.2019 20:47		10
Barium	7440-39-3	**97.5**	3.77	mg/kg	10.31.2019 20:47		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	10.31.2019 20:47	U	10
Chromium	7440-47-3	**7.94**	3.77	mg/kg	10.31.2019 20:47		10
Lead	7439-92-1	**33.8**	1.89	mg/kg	10.31.2019 20:47		10
Selenium	7782-49-2	BRL	1.89	mg/kg	10.31.2019 20:47	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	10.31.2019 20:47	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-0-102719**
Lab Sample Id: 641446-015

Matrix: Soil
Date Collected: 10.27.2019 16:26

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 11:03

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Acenaphthylene	208-96-8	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Anthracene	120-12-7	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Benzo(a)anthracene	56-55-3	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Benzo(a)pyrene	50-32-8	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Benzo(b)fluoranthene	205-99-2	**0.0135**	0.00832	mg/kg	10.30.2019 22:47		5
Benzo(g,h,i)perylene	191-24-2	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Benzo(k)fluoranthene	207-08-9	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Chrysene	218-01-9	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Fluoranthene	206-44-0	**0.0126**	0.00832	mg/kg	10.30.2019 22:47		5
Fluorene	86-73-7	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00832	mg/kg	10.30.2019 22:47	U	5
Naphthalene	91-20-3	BRL	0.0832	mg/kg	10.30.2019 22:47	U	5
Phenanthrene	85-01-8	**0.0104**	0.00832	mg/kg	10.30.2019 22:47		5
Pyrene	129-00-0	**0.0112**	0.00832	mg/kg	10.30.2019 22:47		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	105	%	31-130	10.30.2019 22:47	
2-Fluorobiphenyl	99	%	51-133	10.30.2019 22:47	
Terphenyl-D14	107	%	46-137	10.30.2019 22:47	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B23-0-102719**
Lab Sample Id: 641446-016
Matrix: Soil
Date Collected: 10.27.2019 16:40
Date Received:10.30.2019 10:00

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106083
Date Prep: 10.31.2019 09:15
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0220**	0.0196	mg/kg	10.31.2019 15:24		1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106129
Date Prep: 10.31.2019 09:30
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.68**	2.00	mg/kg	10.31.2019 20:50		10
Barium	7440-39-3	**146**	4.00	mg/kg	10.31.2019 20:50		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	10.31.2019 20:50	U	10
Chromium	7440-47-3	**8.28**	4.00	mg/kg	10.31.2019 20:50		10
Lead	7439-92-1	**25.8**	2.00	mg/kg	10.31.2019 20:50		10
Selenium	7782-49-2	BRL	2.00	mg/kg	10.31.2019 20:50	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	10.31.2019 20:50	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B23-0-102719**
Lab Sample Id: 641446-016

Matrix: Soil
Date Collected: 10.27.2019 16:40

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 11:06

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00833	mg/kg	10.30.2019 23:04	U	5
Acenaphthylene	208-96-8	**0.0460**	0.00833	mg/kg	10.30.2019 23:04		5
Anthracene	120-12-7	**0.0506**	0.00833	mg/kg	10.30.2019 23:04		5
Benzo(a)anthracene	56-55-3	**0.116**	0.00833	mg/kg	10.30.2019 23:04		5
Benzo(a)pyrene	50-32-8	**0.190**	0.00833	mg/kg	10.30.2019 23:04		5
Benzo(b)fluoranthene	205-99-2	**0.273**	0.00833	mg/kg	10.30.2019 23:04		5
Benzo(g,h,i)perylene	191-24-2	**0.112**	0.00833	mg/kg	10.30.2019 23:04		5
Benzo(k)fluoranthene	207-08-9	**0.0821**	0.00833	mg/kg	10.30.2019 23:04		5
Chrysene	218-01-9	**0.149**	0.00833	mg/kg	10.30.2019 23:04		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00833	mg/kg	10.30.2019 23:04	U	5
Fluoranthene	206-44-0	**0.386**	0.00833	mg/kg	10.30.2019 23:04		5
Fluorene	86-73-7	**0.0141**	0.00833	mg/kg	10.30.2019 23:04		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0881**	0.00833	mg/kg	10.30.2019 23:04		5
Naphthalene	91-20-3	BRL	0.0833	mg/kg	10.30.2019 23:04	U	5
Phenanthrene	85-01-8	**0.270**	0.00833	mg/kg	10.30.2019 23:04		5
Pyrene	129-00-0	**0.438**	0.00833	mg/kg	10.30.2019 23:04		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	69	%	31-130	10.30.2019 23:04	
2-Fluorobiphenyl	83	%	51-133	10.30.2019 23:04	
Terphenyl-D14	95	%	46-137	10.30.2019 23:04	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B16-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-017
Date Collected: 10.27.2019 17:12

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 09:15
Basis: Wet Weight
Seq Number: 3106083
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0625**	0.0196	mg/kg	10.31.2019 15:26		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 09:30
Basis: Wet Weight
Seq Number: 3106129
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**10.3**	1.67	mg/kg	10.31.2019 20:53		10
Barium	7440-39-3	**124**	3.33	mg/kg	10.31.2019 20:53		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	10.31.2019 20:53	U	10
Chromium	7440-47-3	**9.62**	3.33	mg/kg	10.31.2019 20:53		10
Lead	7439-92-1	**60.8**	1.67	mg/kg	10.31.2019 20:53		10
Selenium	7782-49-2	BRL	1.67	mg/kg	10.31.2019 20:53	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	10.31.2019 20:53	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B16-0-102719**
Lab Sample Id: 641446-017

Matrix: Soil
Date Collected: 10.27.2019 17:12

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 11:09

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00333	mg/kg	10.30.2019 23:21	U	2
Acenaphthylene	208-96-8	**0.0110**	0.00333	mg/kg	10.30.2019 23:21		2
Anthracene	120-12-7	**0.0147**	0.00333	mg/kg	10.30.2019 23:21		2
Benzo(a)anthracene	56-55-3	**0.0245**	0.00333	mg/kg	10.30.2019 23:21		2
Benzo(a)pyrene	50-32-8	**0.0376**	0.00333	mg/kg	10.30.2019 23:21		2
Benzo(b)fluoranthene	205-99-2	**0.0742**	0.00333	mg/kg	10.30.2019 23:21		2
Benzo(g,h,i)perylene	191-24-2	**0.0242**	0.00333	mg/kg	10.30.2019 23:21		2
Benzo(k)fluoranthene	207-08-9	**0.0169**	0.00333	mg/kg	10.30.2019 23:21		2
Chrysene	218-01-9	**0.0341**	0.00333	mg/kg	10.30.2019 23:21		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00333	mg/kg	10.30.2019 23:21	U	2
Fluoranthene	206-44-0	**0.0572**	0.00333	mg/kg	10.30.2019 23:21		2
Fluorene	86-73-7	BRL	0.00333	mg/kg	10.30.2019 23:21	U	2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0188**	0.00333	mg/kg	10.30.2019 23:21		2
Naphthalene	91-20-3	BRL	0.0333	mg/kg	10.30.2019 23:21	U	2
Phenanthrene	85-01-8	**0.0287**	0.00333	mg/kg	10.30.2019 23:21		2
Pyrene	129-00-0	**0.0642**	0.00333	mg/kg	10.30.2019 23:21		2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	93	%	31-130	10.30.2019 23:21	
2-Fluorobiphenyl	97	%	51-133	10.30.2019 23:21	
Terphenyl-D14	114	%	46-137	10.30.2019 23:21	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B17-0-102719** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-018 Date Collected: 10.27.2019 17:38

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 09:15 Basis: Wet Weight

Seq Number: 3106083 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0415**	0.0182	mg/kg	10.31.2019 15:28		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 09:30 Basis: Wet Weight

Seq Number: 3106129 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.71**	1.75	mg/kg	10.31.2019 20:56		10
Barium	7440-39-3	**98.0**	3.51	mg/kg	10.31.2019 20:56		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	10.31.2019 20:56	U	10
Chromium	7440-47-3	**8.10**	3.51	mg/kg	10.31.2019 20:56		10
Lead	7439-92-1	**42.7**	1.75	mg/kg	10.31.2019 20:56		10
Selenium	7782-49-2	BRL	1.75	mg/kg	10.31.2019 20:56	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	10.31.2019 20:56	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B17-0-102719**
Lab Sample Id: 641446-018

Matrix: Soil
Date Collected: 10.27.2019 17:38

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 11:12

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00834	mg/kg	10.30.2019 23:38	U	5
Acenaphthylene	208-96-8	**0.0166**	0.00834	mg/kg	10.30.2019 23:38		5
Anthracene	120-12-7	**0.0217**	0.00834	mg/kg	10.30.2019 23:38		5
Benzo(a)anthracene	56-55-3	**0.0583**	0.00834	mg/kg	10.30.2019 23:38		5
Benzo(a)pyrene	50-32-8	**0.0835**	0.00834	mg/kg	10.30.2019 23:38		5
Benzo(b)fluoranthene	205-99-2	**0.135**	0.00834	mg/kg	10.30.2019 23:38		5
Benzo(g,h,i)perylene	191-24-2	**0.0500**	0.00834	mg/kg	10.30.2019 23:38		5
Benzo(k)fluoranthene	207-08-9	**0.0474**	0.00834	mg/kg	10.30.2019 23:38		5
Chrysene	218-01-9	**0.0819**	0.00834	mg/kg	10.30.2019 23:38		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00834	mg/kg	10.30.2019 23:38	U	5
Fluoranthene	206-44-0	**0.162**	0.00834	mg/kg	10.30.2019 23:38		5
Fluorene	86-73-7	BRL	0.00834	mg/kg	10.30.2019 23:38	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0362**	0.00834	mg/kg	10.30.2019 23:38		5
Naphthalene	91-20-3	BRL	0.0834	mg/kg	10.30.2019 23:38	U	5
Phenanthrene	85-01-8	**0.105**	0.00834	mg/kg	10.30.2019 23:38		5
Pyrene	129-00-0	**0.181**	0.00834	mg/kg	10.30.2019 23:38		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	78	%	31-130	10.30.2019 23:38	
2-Fluorobiphenyl	101	%	51-133	10.30.2019 23:38	
Terphenyl-D14	121	%	46-137	10.30.2019 23:38	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-102719**
Lab Sample Id: 641446-019
Matrix: Soil
Date Collected: 10.27.2019 00:00
Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931
Date Prep: 10.30.2019 15:00
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,1-Dichloroethane	75-34-3	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,1-Dichloroethene	75-35-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,1-Dichloropropene	563-58-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2-Dibromoethane	106-93-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2-Dichloroethane	107-06-2	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,2-Dichloropropane	78-87-5	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,3-Dichloropropane	142-28-9	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
2,2-Dichloropropane	594-20-7	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
2-Butanone	78-93-3	BRL	1.00	mg/kg	10.30.2019 18:05	U	50
2-Chlorotoluene	95-49-8	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
2-Hexanone	591-78-6	BRL	2.50	mg/kg	10.30.2019 18:05	U	50
4-Chlorotoluene	106-43-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.50	mg/kg	10.30.2019 18:05	U	50
Acetone	67-64-1	BRL	5.00	mg/kg	10.30.2019 18:05	U	50
Benzene	71-43-2	BRL	0.0500	mg/kg	10.30.2019 18:05	U	50
Bromobenzene	108-86-1	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Bromochloromethane	74-97-5	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Bromodichloromethane	75-27-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Bromoform	75-25-2	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Bromomethane	74-83-9	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Carbon Disulfide	75-15-0	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Carbon Tetrachloride	56-23-5	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Chlorobenzene	108-90-7	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Chloroethane	75-00-3	BRL	0.500	mg/kg	10.30.2019 18:05	U	50
Chloroform	67-66-3	BRL	0.250	mg/kg	10.30.2019 18:05	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-102719**
Lab Sample Id: 641446-019

Matrix: Soil
Date Collected: 10.27.2019 00:00

Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Dibromochloromethane	124-48-1	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Dibromomethane	74-95-3	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Ethylbenzene	100-41-4	BRL	0.0500	mg/kg	10.30.2019 18:05	U	50
Hexachlorobutadiene	87-68-3	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.00	mg/kg	10.30.2019 18:05	U	50
Isopropylbenzene	98-82-8	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
m,p-Xylenes	179601-23-1	BRL	0.100	mg/kg	10.30.2019 18:05	U	50
Methylene Chloride	75-09-2	BRL	1.00	mg/kg	10.30.2019 18:05	U	50
MTBE	1634-04-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Naphthalene	91-20-3	BRL	0.500	mg/kg	10.30.2019 18:05	U	50
n-Butylbenzene	104-51-8	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
n-Propylbenzene	103-65-1	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
o-Xylene	95-47-6	BRL	0.0500	mg/kg	10.30.2019 18:05	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Sec-Butylbenzene	135-98-8	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Styrene	100-42-5	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
tert-Butylbenzene	98-06-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Tetrachloroethylene	127-18-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Toluene	108-88-3	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Total Xylenes	1330-20-7	BRL	0.0500	mg/kg	10.30.2019 18:05	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Trichloroethene	79-01-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Trichlorofluoromethane	75-69-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Vinyl Acetate	108-05-4	BRL	0.500	mg/kg	10.30.2019 18:05	U	50
Vinyl Chloride	75-01-4	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
1,3-Butadiene	106-99-0	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Cyclohexane	110-82-7	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Dicyclopentadiene	77-73-6	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Methylcyclohexane	108-87-2	BRL	0.500	mg/kg	10.30.2019 18:05	U	50
n-Hexane	110-54-3	BRL	0.500	mg/kg	10.30.2019 18:05	U	50
4-Ethyltoluene	622-96-8	BRL	0.250	mg/kg	10.30.2019 18:05	U	50
Propene	115-07-1	BRL	0.250	mg/kg	10.30.2019 18:05	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-102719**
Lab Sample Id: 641446-019

Matrix: Soil
Date Collected: 10.27.2019 00:00

Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	91	%	53-142	10.30.2019 18:05	
1,2-Dichloroethane-D4	99	%	56-150	10.30.2019 18:05	
Toluene-D8	103	%	70-130	10.30.2019 18:05	
4-Bromofluorobenzene	99	%	68-152	10.30.2019 18:05	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-0-102719** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-020 Date Collected: 10.28.2019 10:15

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 09:15 Basis: Wet Weight

Seq Number: 3106083 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	10.31.2019 15:30	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 09:30 Basis: Wet Weight

Seq Number: 3106129 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.55**	1.72	mg/kg	10.31.2019 20:59		10
Barium	7440-39-3	**103**	3.45	mg/kg	10.31.2019 20:59		10
Cadmium	7440-43-9	BRL	1.72	mg/kg	10.31.2019 20:59	U	10
Chromium	7440-47-3	**6.67**	3.45	mg/kg	10.31.2019 20:59		10
Lead	7439-92-1	**41.4**	1.72	mg/kg	10.31.2019 20:59		10
Selenium	7782-49-2	BRL	1.72	mg/kg	10.31.2019 20:59	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	10.31.2019 20:59	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-0-102719**
Lab Sample Id: 641446-020

Matrix: Soil
Date Collected: 10.28.2019 10:15

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 11:15

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00803**	0.00334	mg/kg	10.30.2019 23:55		2
Acenaphthylene	208-96-8	**0.0588**	0.00334	mg/kg	10.30.2019 23:55		2
Anthracene	120-12-7	**0.0124**	0.00334	mg/kg	10.30.2019 23:55		2
Benzo(a)anthracene	56-55-3	**0.0360**	0.00334	mg/kg	10.30.2019 23:55		2
Benzo(a)pyrene	50-32-8	**0.0755**	0.00334	mg/kg	10.30.2019 23:55		2
Benzo(b)fluoranthene	205-99-2	**0.106**	0.00334	mg/kg	10.30.2019 23:55		2
Benzo(g,h,i)perylene	191-24-2	**0.0552**	0.00334	mg/kg	10.30.2019 23:55		2
Benzo(k)fluoranthene	207-08-9	**0.0289**	0.00334	mg/kg	10.30.2019 23:55		2
Chrysene	218-01-9	**0.0479**	0.00334	mg/kg	10.30.2019 23:55		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00334	mg/kg	10.30.2019 23:55	U	2
Fluoranthene	206-44-0	**0.140**	0.00334	mg/kg	10.30.2019 23:55		2
Fluorene	86-73-7	BRL	0.00334	mg/kg	10.30.2019 23:55	U	2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0417**	0.00334	mg/kg	10.30.2019 23:55		2
Naphthalene	91-20-3	BRL	0.0334	mg/kg	10.30.2019 23:55	U	2
Phenanthrene	85-01-8	**0.0679**	0.00334	mg/kg	10.30.2019 23:55		2
Pyrene	129-00-0	**0.201**	0.00334	mg/kg	10.30.2019 23:55		2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	79	%	31-130	10.30.2019 23:55	
2-Fluorobiphenyl	90	%	51-133	10.30.2019 23:55	
Terphenyl-D14	116	%	46-137	10.30.2019 23:55	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B24-0-102719** Matrix: Soil Date Received:10.30.2019 10:00
Lab Sample Id: 641446-021 Date Collected: 10.28.2019 10:32

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 10.31.2019 09:15 Basis: Wet Weight
Seq Number: 3106083 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0453**	0.0185	mg/kg	10.31.2019 15:32		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 10.31.2019 18:00 Basis: Wet Weight
Seq Number: 3106155 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**10.3**	1.92	mg/kg	11.01.2019 12:31		10
Barium	7440-39-3	**160**	3.85	mg/kg	11.01.2019 12:31		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.01.2019 12:31	U	10
Chromium	7440-47-3	**11.6**	3.85	mg/kg	11.01.2019 12:31		10
Lead	7439-92-1	**66.9**	1.92	mg/kg	11.01.2019 12:31		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.01.2019 12:31	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.01.2019 12:31	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B24-0-102719**
Lab Sample Id: 641446-021

Matrix: Soil
Date Collected: 10.28.2019 10:32

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106008

Date Prep: 10.30.2019 11:18

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0138**	0.00333	mg/kg	10.31.2019 00:11		2
Acenaphthylene	208-96-8	**0.211**	0.00333	mg/kg	10.31.2019 00:11		2
Anthracene	120-12-7	**0.113**	0.00333	mg/kg	10.31.2019 00:11		2
Benzo(a)anthracene	56-55-3	**0.394**	0.00333	mg/kg	10.31.2019 00:11		2
Benzo(a)pyrene	50-32-8	**0.814**	0.0333	mg/kg	10.31.2019 11:15	D	20
Benzo(b)fluoranthene	205-99-2	**0.898**	0.0333	mg/kg	10.31.2019 11:15	D	20
Benzo(g,h,i)perylene	191-24-2	**0.473**	0.00333	mg/kg	10.31.2019 00:11		2
Benzo(k)fluoranthene	207-08-9	**0.274**	0.00333	mg/kg	10.31.2019 00:11		2
Chrysene	218-01-9	**0.523**	0.00333	mg/kg	10.31.2019 00:11		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00333	mg/kg	10.31.2019 00:11	U	2
Fluoranthene	206-44-0	**1.49**	0.0333	mg/kg	10.31.2019 11:15	D	20
Fluorene	86-73-7	**0.0332**	0.00333	mg/kg	10.31.2019 00:11		2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.369**	0.00333	mg/kg	10.31.2019 00:11		2
Naphthalene	91-20-3	**0.140**	0.0333	mg/kg	10.31.2019 00:11		2
Phenanthrene	85-01-8	**0.891**	0.0333	mg/kg	10.31.2019 11:15	D	20
Pyrene	129-00-0	**1.78**	0.0333	mg/kg	10.31.2019 11:15	D	20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	83	%	31-130	10.31.2019 00:11	
2-Fluorobiphenyl	94	%	51-133	10.31.2019 00:11	
Terphenyl-D14	126	%	46-137	10.31.2019 00:11	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B30-0-102719**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-022
Date Collected: 10.28.2019 11:12

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 09:15
Basis: Wet Weight
Seq Number: 3106083
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0249**	0.0192	mg/kg	10.31.2019 15:34		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 18:00
Basis: Wet Weight
Seq Number: 3106155
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.51**	1.85	mg/kg	11.01.2019 12:34		10
Barium	7440-39-3	**139**	3.70	mg/kg	11.01.2019 12:34		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.01.2019 12:34	U	10
Chromium	7440-47-3	**10.4**	3.70	mg/kg	11.01.2019 12:34		10
Lead	7439-92-1	**40.1**	1.85	mg/kg	11.01.2019 12:34		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.01.2019 12:34	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.01.2019 12:34	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B30-0-102719**
Lab Sample Id: 641446-022

Matrix: Soil
Date Collected: 10.28.2019 11:12

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106011

Date Prep: 10.30.2019 11:24

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00334	mg/kg	10.31.2019 00:28	U	2
Acenaphthylene	208-96-8	**0.00566**	0.00334	mg/kg	10.31.2019 00:28		2
Anthracene	120-12-7	**0.00735**	0.00334	mg/kg	10.31.2019 00:28		2
Benzo(a)anthracene	56-55-3	**0.0235**	0.00334	mg/kg	10.31.2019 00:28		2
Benzo(a)pyrene	50-32-8	**0.0350**	0.00334	mg/kg	10.31.2019 00:28		2
Benzo(b)fluoranthene	205-99-2	**0.0644**	0.00334	mg/kg	10.31.2019 00:28		2
Benzo(g,h,i)perylene	191-24-2	**0.0210**	0.00334	mg/kg	10.31.2019 00:28		2
Benzo(k)fluoranthene	207-08-9	**0.0192**	0.00334	mg/kg	10.31.2019 00:28		2
Chrysene	218-01-9	**0.0335**	0.00334	mg/kg	10.31.2019 00:28		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00334	mg/kg	10.31.2019 00:28	U	2
Fluoranthene	206-44-0	**0.0624**	0.00334	mg/kg	10.31.2019 00:28		2
Fluorene	86-73-7	BRL	0.00334	mg/kg	10.31.2019 00:28	U	2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0175**	0.00334	mg/kg	10.31.2019 00:28		2
Naphthalene	91-20-3	BRL	0.0334	mg/kg	10.31.2019 00:28	U	2
Phenanthrene	85-01-8	**0.0281**	0.00334	mg/kg	10.31.2019 00:28		2
Pyrene	129-00-0	**0.0736**	0.00334	mg/kg	10.31.2019 00:28		2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	78	%	31-130	10.31.2019 00:28	
2-Fluorobiphenyl	91	%	51-133	10.31.2019 00:28	
Terphenyl-D14	120	%	46-137	10.31.2019 00:28	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B34-5.0-5.5-102819**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-023
Date Collected: 10.28.2019 11:05
Sample Depth: 5 - 5.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 09:15
Basis: Wet Weight
Seq Number: 3106083
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	10.31.2019 15:49	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 18:00
Basis: Wet Weight
Seq Number: 3106155
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.45**	1.92	mg/kg	11.01.2019 12:37		10
Barium	7440-39-3	**104**	3.85	mg/kg	11.01.2019 12:37		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.01.2019 12:37	U	10
Chromium	7440-47-3	**10.6**	3.85	mg/kg	11.01.2019 12:37		10
Lead	7439-92-1	**14.1**	1.92	mg/kg	11.01.2019 12:37		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.01.2019 12:37	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.01.2019 12:37	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B34-5.0-5.5-102819**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-023	Date Collected:	10.28.2019 11:05	Sample Depth:	5 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 11:27	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Benzo(a)pyrene	50-32-8	**0.00228**	0.00167	mg/kg	10.31.2019 00:45		1
Benzo(b)fluoranthene	205-99-2	**0.00419**	0.00167	mg/kg	10.31.2019 00:45		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Chrysene	218-01-9	**0.00191**	0.00167	mg/kg	10.31.2019 00:45		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Fluoranthene	206-44-0	**0.00314**	0.00167	mg/kg	10.31.2019 00:45		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	10.31.2019 00:45	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	10.31.2019 00:45	U	1
Pyrene	129-00-0	**0.00388**	0.00167	mg/kg	10.31.2019 00:45		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	93	%	31-130	10.31.2019 00:45	
2-Fluorobiphenyl	109	%	51-133	10.31.2019 00:45	
Terphenyl-D14	138	%	46-137	10.31.2019 00:45	**

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102819**
Lab Sample Id: 641446-024

Matrix: Soil
Date Collected: 10.28.2019 11:15

Date Received:10.30.2019 10:00

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106083

Date Prep: 10.31.2019 09:15

Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	10.31.2019 15:51	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106155

Date Prep: 10.31.2019 18:00

Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.8**	1.72	mg/kg	11.01.2019 12:40		10
Barium	7440-39-3	**76.4**	3.45	mg/kg	11.01.2019 12:40		10
Cadmium	7440-43-9	BRL	1.72	mg/kg	11.01.2019 12:40	U	10
Chromium	7440-47-3	**10.5**	3.45	mg/kg	11.01.2019 12:40		10
Lead	7439-92-1	**12.6**	1.72	mg/kg	11.01.2019 12:40		10
Selenium	7782-49-2	BRL	1.72	mg/kg	11.01.2019 12:40	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	11.01.2019 12:40	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102819**
Lab Sample Id: 641446-024

Matrix: Soil
Date Collected: 10.28.2019 11:15

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106011

Date Prep: 10.30.2019 11:30

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Benzo(a)pyrene	50-32-8	**0.00234**	0.00166	mg/kg	10.31.2019 01:02		1
Benzo(b)fluoranthene	205-99-2	**0.00385**	0.00166	mg/kg	10.31.2019 01:02		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Chrysene	218-01-9	**0.00210**	0.00166	mg/kg	10.31.2019 01:02		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Fluoranthene	206-44-0	**0.00468**	0.00166	mg/kg	10.31.2019 01:02		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	10.31.2019 01:02	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	10.31.2019 01:02	U	1
Phenanthrene	85-01-8	**0.00198**	0.00166	mg/kg	10.31.2019 01:02		1
Pyrene	129-00-0	**0.00575**	0.00166	mg/kg	10.31.2019 01:02		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	91	%	31-130	10.31.2019 01:02	
2-Fluorobiphenyl	107	%	51-133	10.31.2019 01:02	
Terphenyl-D14	132	%	46-137	10.31.2019 01:02	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B33-5.0'-5.5'**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-025	Date Collected:	10.28.2019 11:50	Sample Depth:	5 - 5.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 09:15	Basis:	Wet Weight
Seq Number:	3106083			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.242**	0.0185	mg/kg	10.31.2019 15:53		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.6**	1.89	mg/kg	11.01.2019 12:43		10
Barium	7440-39-3	**158**	3.77	mg/kg	11.01.2019 12:43		10
Cadmium	7440-43-9	**2.78**	1.89	mg/kg	11.01.2019 12:43		10
Chromium	7440-47-3	**14.0**	3.77	mg/kg	11.01.2019 12:43		10
Lead	7439-92-1	**222**	1.89	mg/kg	11.01.2019 12:43		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.01.2019 12:43	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.01.2019 12:43	U	10

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B33-5.0'-5.5'**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-025	Date Collected:	10.28.2019 11:50	Sample Depth:	5 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 11:33	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00333	mg/kg	10.31.2019 01:19	U	2
Acenaphthylene	208-96-8	**0.0241**	0.00333	mg/kg	10.31.2019 01:19		2
Anthracene	120-12-7	**0.0326**	0.00333	mg/kg	10.31.2019 01:19		2
Benzo(a)anthracene	56-55-3	**0.0745**	0.00333	mg/kg	10.31.2019 01:19		2
Benzo(a)pyrene	50-32-8	**0.112**	0.00333	mg/kg	10.31.2019 01:19		2
Benzo(b)fluoranthene	205-99-2	**0.169**	0.00333	mg/kg	10.31.2019 01:19		2
Benzo(g,h,i)perylene	191-24-2	**0.0510**	0.00333	mg/kg	10.31.2019 01:19		2
Benzo(k)fluoranthene	207-08-9	**0.0575**	0.00333	mg/kg	10.31.2019 01:19		2
Chrysene	218-01-9	**0.0967**	0.00333	mg/kg	10.31.2019 01:19		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00333	mg/kg	10.31.2019 01:19	U	2
Fluoranthene	206-44-0	**0.191**	0.00333	mg/kg	10.31.2019 01:19		2
Fluorene	86-73-7	**0.00471**	0.00333	mg/kg	10.31.2019 01:19		2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0461**	0.00333	mg/kg	10.31.2019 01:19		2
Naphthalene	91-20-3	BRL	0.0333	mg/kg	10.31.2019 01:19	U	2
Phenanthrene	85-01-8	**0.0960**	0.00333	mg/kg	10.31.2019 01:19		2
Pyrene	129-00-0	**0.244**	0.00333	mg/kg	10.31.2019 01:19		2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	92	%	31-130	10.31.2019 01:19	
2-Fluorobiphenyl	106	%	51-133	10.31.2019 01:19	
Terphenyl-D14	131	%	46-137	10.31.2019 01:19	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B32-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-026	Date Collected:	10.28.2019 13:55	Sample Depth:	5 - 5.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 09:15	Basis:	Wet Weight
Seq Number:	3106083			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0492**	0.0200	mg/kg	10.31.2019 15:54		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.13**	1.85	mg/kg	11.01.2019 12:46		10
Barium	7440-39-3	**107**	3.70	mg/kg	11.01.2019 12:46		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.01.2019 12:46	U	10
Chromium	7440-47-3	**8.20**	3.70	mg/kg	11.01.2019 12:46		10
Lead	7439-92-1	**62.5**	1.85	mg/kg	11.01.2019 12:46		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.01.2019 12:46	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.01.2019 12:46	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B32-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-026	Date Collected:	10.28.2019 13:55	Sample Depth:	5 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 11:36	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	10.31.2019 01:36	U	1
Acenaphthylene	208-96-8	**0.00212**	0.00167	mg/kg	10.31.2019 01:36		1
Anthracene	120-12-7	**0.00219**	0.00167	mg/kg	10.31.2019 01:36		1
Benzo(a)anthracene	56-55-3	**0.00468**	0.00167	mg/kg	10.31.2019 01:36		1
Benzo(a)pyrene	50-32-8	**0.00652**	0.00167	mg/kg	10.31.2019 01:36		1
Benzo(b)fluoranthene	205-99-2	**0.0113**	0.00167	mg/kg	10.31.2019 01:36		1
Benzo(g,h,i)perylene	191-24-2	**0.00345**	0.00167	mg/kg	10.31.2019 01:36		1
Benzo(k)fluoranthene	207-08-9	**0.00328**	0.00167	mg/kg	10.31.2019 01:36		1
Chrysene	218-01-9	**0.00657**	0.00167	mg/kg	10.31.2019 01:36		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	10.31.2019 01:36	U	1
Fluoranthene	206-44-0	**0.0103**	0.00167	mg/kg	10.31.2019 01:36		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	10.31.2019 01:36	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00278**	0.00167	mg/kg	10.31.2019 01:36		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	10.31.2019 01:36	U	1
Phenanthrene	85-01-8	**0.00484**	0.00167	mg/kg	10.31.2019 01:36		1
Pyrene	129-00-0	**0.0123**	0.00167	mg/kg	10.31.2019 01:36		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	75	%	31-130	10.31.2019 01:36	
2-Fluorobiphenyl	87	%	51-133	10.31.2019 01:36	
Terphenyl-D14	115	%	46-137	10.31.2019 01:36	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**B-FD02-102819**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-027	Date Collected:	10.28.2019 14:05	Sample Depth:	5 - 5.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 09:15	Basis:	Wet Weight
Seq Number:	3106083			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	10.31.2019 15:56	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**10.3**	1.67	mg/kg	11.01.2019 12:49		10
Barium	7440-39-3	**114**	3.33	mg/kg	11.01.2019 12:49		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.01.2019 12:49	U	10
Chromium	7440-47-3	**4.01**	3.33	mg/kg	11.01.2019 12:49		10
Lead	7439-92-1	**40.5**	1.67	mg/kg	11.01.2019 12:49		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.01.2019 12:49	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.01.2019 12:49	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**B-FD02-102819**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-027	Date Collected:	10.28.2019 14:05	Sample Depth:	5 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 11:39	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	10.31.2019 01:53	U	1
Acenaphthylene	208-96-8	**0.00333**	0.00166	mg/kg	10.31.2019 01:53		1
Anthracene	120-12-7	**0.00279**	0.00166	mg/kg	10.31.2019 01:53		1
Benzo(a)anthracene	56-55-3	**0.00975**	0.00166	mg/kg	10.31.2019 01:53		1
Benzo(a)pyrene	50-32-8	**0.0176**	0.00166	mg/kg	10.31.2019 01:53		1
Benzo(b)fluoranthene	205-99-2	**0.0260**	0.00166	mg/kg	10.31.2019 01:53		1
Benzo(g,h,i)perylene	191-24-2	**0.00904**	0.00166	mg/kg	10.31.2019 01:53		1
Benzo(k)fluoranthene	207-08-9	**0.00721**	0.00166	mg/kg	10.31.2019 01:53		1
Chrysene	218-01-9	**0.0130**	0.00166	mg/kg	10.31.2019 01:53		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	10.31.2019 01:53	U	1
Fluoranthene	206-44-0	**0.0258**	0.00166	mg/kg	10.31.2019 01:53		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	10.31.2019 01:53	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00772**	0.00166	mg/kg	10.31.2019 01:53		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	10.31.2019 01:53	U	1
Phenanthrene	85-01-8	**0.00975**	0.00166	mg/kg	10.31.2019 01:53		1
Pyrene	129-00-0	**0.0358**	0.00166	mg/kg	10.31.2019 01:53		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	75	%	31-130	10.31.2019 01:53	
2-Fluorobiphenyl	88	%	51-133	10.31.2019 01:53	
Terphenyl-D14	113	%	46-137	10.31.2019 01:53	

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Sample Id:	**D-B31-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-028	Date Collected:	10.28.2019 14:25	Sample Depth:	5 - 5.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 09:15	Basis:	Wet Weight
Seq Number:	3106083			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.228**	0.0182	mg/kg	10.31.2019 16:02		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.6**	1.96	mg/kg	11.01.2019 12:52		10
Barium	7440-39-3	**143**	3.92	mg/kg	11.01.2019 12:52		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.01.2019 12:52	U	10
Chromium	7440-47-3	**11.4**	3.92	mg/kg	11.01.2019 12:52		10
Lead	7439-92-1	**98.2**	1.96	mg/kg	11.01.2019 12:52		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.01.2019 12:52	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.01.2019 12:52	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B31-5.0-5.5**
Lab Sample Id: 641446-028

Matrix: Soil
Date Collected: 10.28.2019 14:25

Date Received:10.30.2019 10:00
Sample Depth: 5 - 5.5 ft

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106011

Date Prep: 10.30.2019 11:42

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00265**	0.00166	mg/kg	10.31.2019 02:09		1
Acenaphthylene	208-96-8	**0.0436**	0.00166	mg/kg	10.31.2019 02:09		1
Anthracene	120-12-7	**0.0254**	0.00166	mg/kg	10.31.2019 02:09		1
Benzo(a)anthracene	56-55-3	**0.115**	0.00166	mg/kg	10.31.2019 02:09		1
Benzo(a)pyrene	50-32-8	**0.217**	0.00166	mg/kg	10.31.2019 02:09		1
Benzo(b)fluoranthene	205-99-2	**0.274**	0.00166	mg/kg	10.31.2019 02:09		1
Benzo(g,h,i)perylene	191-24-2	**0.109**	0.00166	mg/kg	10.31.2019 02:09		1
Benzo(k)fluoranthene	207-08-9	**0.0810**	0.00166	mg/kg	10.31.2019 02:09		1
Chrysene	218-01-9	**0.149**	0.00166	mg/kg	10.31.2019 02:09		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	10.31.2019 02:09	U	1
Fluoranthene	206-44-0	**0.309**	0.00166	mg/kg	10.31.2019 02:09		1
Fluorene	86-73-7	**0.00748**	0.00166	mg/kg	10.31.2019 02:09		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0885**	0.00166	mg/kg	10.31.2019 02:09		1
Naphthalene	91-20-3	**0.0168**	0.0166	mg/kg	10.31.2019 02:09		1
Phenanthrene	85-01-8	**0.164**	0.00166	mg/kg	10.31.2019 02:09		1
Pyrene	129-00-0	**0.439**	0.00831	mg/kg	10.31.2019 11:49	D	5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	56	%	31-130	10.31.2019 02:09	
2-Fluorobiphenyl	71	%	51-133	10.31.2019 02:09	
Terphenyl-D14	128	%	46-137	10.31.2019 02:09	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

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Sample Id: **D-B35-5.0-5.5**
Lab Sample Id: 641446-029
Matrix: Soil
Date Collected: 10.28.2019 16:40
Date Received:10.30.2019 10:00
Sample Depth: 5 - 5.5 ft

Analytical Method: Total Cyanide by SW 9012
Tech: KCS
Analyst: KCS
Seq Number: 3106209
Date Prep: 11.01.2019 14:00
Prep Method: E335.4P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0588	mg/kg	11.01.2019 15:42	U	1

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106083
Date Prep: 10.31.2019 09:15
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.000228**	0.000196	mg/kg	10.31.2019 14:23		1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106155
Date Prep: 10.31.2019 18:00
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.0**	1.89	mg/kg	11.01.2019 12:11		10
Barium	7440-39-3	**174**	3.77	mg/kg	11.01.2019 12:11		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.01.2019 12:11	U	10
Chromium	7440-47-3	**14.1**	3.77	mg/kg	11.01.2019 12:11		10
Lead	7439-92-1	**29.9**	1.89	mg/kg	11.01.2019 12:11		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.01.2019 12:11	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.01.2019 12:11	U	10

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APS, Phoenix, AZ

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Sample Id: **D-B35-5.0-5.5** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-029 Date Collected: 10.28.2019 16:40 Sample Depth: 5 - 5.5 ft

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106060

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	10.31.2019 11:06		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.12**		SU	10.31.2019 12:25		1
Temperature	TEMP	**23.3**		Deg C	10.31.2019 12:25	+	1

Certificate of Analytical Results 641446

APS, Phoenix, AZ

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Sample Id:	**D-B35-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-029	Date Collected:	10.28.2019 16:40	Sample Depth:	5 - 5.5 ft
Analytical Method:	PCBs by SW 8082A			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	SHM	Date Prep:	10.31.2019 09:39	Basis:	Wet Weight
Seq Number:	3106146			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0167	mg/kg	11.01.2019 11:23	U	1
PCB-1221	11104-28-2	BRL	0.0167	mg/kg	11.01.2019 11:23	U	1
PCB-1232	11141-16-5	BRL	0.0167	mg/kg	11.01.2019 11:23	U	1
PCB-1242	53469-21-9	BRL	0.0167	mg/kg	11.01.2019 11:23	U	1
PCB-1248	12672-29-6	BRL	0.0167	mg/kg	11.01.2019 11:23	U	1
PCB-1254	11097-69-1	BRL	0.0167	mg/kg	11.01.2019 11:23	U	1
PCB-1260	11096-82-5	BRL	0.0167	mg/kg	11.01.2019 11:23	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	86	%	39-125	11.01.2019 11:23	
Tetrachloro-m-xylene	61	%	37-124	11.01.2019 11:23	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B35-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-029	Date Collected:	10.28.2019 16:40	Sample Depth:	5 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 11:45	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	10.30.2019 17:29	U	10
Acenaphthylene	208-96-8	BRL	0.0167	mg/kg	10.30.2019 17:29	U	10
Anthracene	120-12-7	BRL	0.0167	mg/kg	10.30.2019 17:29	U	10
Benzo(a)anthracene	56-55-3	**0.0225**	0.0167	mg/kg	10.30.2019 17:29		10
Benzo(a)pyrene	50-32-8	**0.0385**	0.0167	mg/kg	10.30.2019 17:29		10
Benzo(b)fluoranthene	205-99-2	**0.0501**	0.0167	mg/kg	10.30.2019 17:29		10
Benzo(g,h,i)perylene	191-24-2	**0.0521**	0.0167	mg/kg	10.30.2019 17:29		10
Benzo(k)fluoranthene	207-08-9	BRL	0.0167	mg/kg	10.30.2019 17:29	U	10
Chrysene	218-01-9	**0.0343**	0.0167	mg/kg	10.30.2019 17:29		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	10.30.2019 17:29	U	10
Fluoranthene	206-44-0	**0.0622**	0.0167	mg/kg	10.30.2019 17:29		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	10.30.2019 17:29	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0346**	0.0167	mg/kg	10.30.2019 17:29		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	10.30.2019 17:29	U	10
Phenanthrene	85-01-8	**0.0182**	0.0167	mg/kg	10.30.2019 17:29		10
Pyrene	129-00-0	**0.0733**	0.0167	mg/kg	10.30.2019 17:29		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	60	%	31-130	10.30.2019 17:29	
2-Fluorobiphenyl	70	%	51-133	10.30.2019 17:29	
Terphenyl-D14	88	%	46-137	10.30.2019 17:29	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B35-5.0-5.5**
Lab Sample Id: 641446-029

Matrix: Soil
Date Collected: 10.28.2019 16:40

Date Received:10.30.2019 10:00
Sample Depth: 5 - 5.5 ft

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 14:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,1-Dichloroethane	75-34-3	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,1-Dichloroethene	75-35-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,1-Dichloropropene	563-58-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2-Dibromoethane	106-93-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2-Dichloroethane	107-06-2	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,2-Dichloropropane	78-87-5	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,3-Dichloropropane	142-28-9	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
2,2-Dichloropropane	594-20-7	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
2-Butanone	78-93-3	BRL	1.30	mg/kg	10.30.2019 15:15	U	50
2-Chlorotoluene	95-49-8	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
2-Hexanone	591-78-6	BRL	3.24	mg/kg	10.30.2019 15:15	U	50
4-Chlorotoluene	106-43-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	3.24	mg/kg	10.30.2019 15:15	U	50
Acetone	67-64-1	BRL	6.48	mg/kg	10.30.2019 15:15	U	50
Benzene	71-43-2	BRL	0.0648	mg/kg	10.30.2019 15:15	U	50
Bromobenzene	108-86-1	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Bromochloromethane	74-97-5	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Bromodichloromethane	75-27-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Bromoform	75-25-2	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Bromomethane	74-83-9	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Carbon Disulfide	75-15-0	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Carbon Tetrachloride	56-23-5	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Chlorobenzene	108-90-7	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Chloroethane	75-00-3	BRL	0.648	mg/kg	10.30.2019 15:15	U	50
Chloroform	67-66-3	BRL	0.324	mg/kg	10.30.2019 15:15	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B35-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-029	Date Collected:	10.28.2019 16:40	Sample Depth:	5 - 5.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	10.30.2019 14:00	Basis:	Wet Weight
Seq Number:	3105931			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Dibromochloromethane	124-48-1	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Dibromomethane	74-95-3	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Ethylbenzene	100-41-4	BRL	0.0648	mg/kg	10.30.2019 15:15	U	50
Hexachlorobutadiene	87-68-3	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.30	mg/kg	10.30.2019 15:15	U	50
Isopropylbenzene	98-82-8	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
m,p-Xylenes	179601-23-1	BRL	0.130	mg/kg	10.30.2019 15:15	U	50
Methylene Chloride	75-09-2	BRL	1.30	mg/kg	10.30.2019 15:15	U	50
MTBE	1634-04-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Naphthalene	91-20-3	BRL	0.648	mg/kg	10.30.2019 15:15	U	50
n-Butylbenzene	104-51-8	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
n-Propylbenzene	103-65-1	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
o-Xylene	95-47-6	BRL	0.0648	mg/kg	10.30.2019 15:15	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Sec-Butylbenzene	135-98-8	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Styrene	100-42-5	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
tert-Butylbenzene	98-06-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Tetrachloroethylene	127-18-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Toluene	108-88-3	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Total Xylenes	1330-20-7	BRL	0.0648	mg/kg	10.30.2019 15:15	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Trichloroethene	79-01-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Trichlorofluoromethane	75-69-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Vinyl Acetate	108-05-4	BRL	0.648	mg/kg	10.30.2019 15:15	U	50
Vinyl Chloride	75-01-4	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
1,3-Butadiene	106-99-0	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Cyclohexane	110-82-7	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Dicyclopentadiene	77-73-6	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Methylcyclohexane	108-87-2	BRL	0.648	mg/kg	10.30.2019 15:15	U	50
n-Hexane	110-54-3	BRL	0.648	mg/kg	10.30.2019 15:15	U	50
4-Ethyltoluene	622-96-8	BRL	0.324	mg/kg	10.30.2019 15:15	U	50
Propene	115-07-1	BRL	0.324	mg/kg	10.30.2019 15:15	U	50

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Sample Id: **D-B35-5.0-5.5**
Lab Sample Id: 641446-029

Matrix: Soil
Date Collected: 10.28.2019 16:40

Date Received: 10.30.2019 10:00
Sample Depth: 5 - 5.5 ft

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 14:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	96	%	53-142	10.30.2019 15:15	
1,2-Dichloroethane-D4	100	%	56-150	10.30.2019 15:15	
Toluene-D8	104	%	70-130	10.30.2019 15:15	
4-Bromofluorobenzene	97	%	68-152	10.30.2019 15:15	

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Sample Id:	**D-B18-2.0-2.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-030	Date Collected:	10.28.2019 17:10	Sample Depth:	2 - 2.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 09:15	Basis:	Wet Weight
Seq Number:	3106083			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0219**	0.0189	mg/kg	10.31.2019 16:04		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.4**	1.67	mg/kg	11.01.2019 12:55		10
Barium	7440-39-3	**65.7**	3.33	mg/kg	11.01.2019 12:55		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.01.2019 12:55	U	10
Chromium	7440-47-3	**8.37**	3.33	mg/kg	11.01.2019 12:55		10
Lead	7439-92-1	**25.2**	1.67	mg/kg	11.01.2019 12:55		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.01.2019 12:55	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.01.2019 12:55	U	10

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Sample Id:	**D-B18-2.0-2.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-030	Date Collected:	10.28.2019 17:10	Sample Depth:	2 - 2.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 11:54	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00334	mg/kg	10.31.2019 02:26	U	2
Acenaphthylene	208-96-8	**0.00979**	0.00334	mg/kg	10.31.2019 02:26		2
Anthracene	120-12-7	**0.00752**	0.00334	mg/kg	10.31.2019 02:26		2
Benzo(a)anthracene	56-55-3	**0.0276**	0.00334	mg/kg	10.31.2019 02:26		2
Benzo(a)pyrene	50-32-8	**0.0474**	0.00334	mg/kg	10.31.2019 02:26		2
Benzo(b)fluoranthene	205-99-2	**0.0698**	0.00334	mg/kg	10.31.2019 02:26		2
Benzo(g,h,i)perylene	191-24-2	**0.0267**	0.00334	mg/kg	10.31.2019 02:26		2
Benzo(k)fluoranthene	207-08-9	**0.0190**	0.00334	mg/kg	10.31.2019 02:26		2
Chrysene	218-01-9	**0.0356**	0.00334	mg/kg	10.31.2019 02:26		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00334	mg/kg	10.31.2019 02:26	U	2
Fluoranthene	206-44-0	**0.0757**	0.00334	mg/kg	10.31.2019 02:26		2
Fluorene	86-73-7	BRL	0.00334	mg/kg	10.31.2019 02:26	U	2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0218**	0.00334	mg/kg	10.31.2019 02:26		2
Naphthalene	91-20-3	BRL	0.0334	mg/kg	10.31.2019 02:26	U	2
Phenanthrene	85-01-8	**0.0394**	0.00334	mg/kg	10.31.2019 02:26		2
Pyrene	129-00-0	**0.105**	0.00334	mg/kg	10.31.2019 02:26		2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	82	%	31-130	10.31.2019 02:26	
2-Fluorobiphenyl	97	%	51-133	10.31.2019 02:26	
Terphenyl-D14	122	%	46-137	10.31.2019 02:26	

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Sample Id:	**D-B18-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-031	Date Collected:	10.28.2019 17:15	Sample Depth:	5 - 2.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 09:15	Basis:	Wet Weight
Seq Number:	3106083			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0237**	0.0182	mg/kg	10.31.2019 16:06		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.69**	2.00	mg/kg	11.01.2019 12:58		10
Barium	7440-39-3	**190**	4.00	mg/kg	11.01.2019 12:58		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.01.2019 12:58	U	10
Chromium	7440-47-3	**8.67**	4.00	mg/kg	11.01.2019 12:58		10
Lead	7439-92-1	**38.1**	2.00	mg/kg	11.01.2019 12:58		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.01.2019 12:58	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.01.2019 12:58	U	10

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Sample Id:	**D-B18-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-031	Date Collected:	10.28.2019 17:15	Sample Depth:	5 - 2.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 11:57	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00333	mg/kg	10.31.2019 02:43	U	2
Acenaphthylene	208-96-8	**0.0179**	0.00333	mg/kg	10.31.2019 02:43		2
Anthracene	120-12-7	**0.0165**	0.00333	mg/kg	10.31.2019 02:43		2
Benzo(a)anthracene	56-55-3	**0.0643**	0.00333	mg/kg	10.31.2019 02:43		2
Benzo(a)pyrene	50-32-8	**0.115**	0.00333	mg/kg	10.31.2019 02:43		2
Benzo(b)fluoranthene	205-99-2	**0.179**	0.00333	mg/kg	10.31.2019 02:43		2
Benzo(g,h,i)perylene	191-24-2	**0.0661**	0.00333	mg/kg	10.31.2019 02:43		2
Benzo(k)fluoranthene	207-08-9	**0.0389**	0.00333	mg/kg	10.31.2019 02:43		2
Chrysene	218-01-9	**0.0865**	0.00333	mg/kg	10.31.2019 02:43		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00333	mg/kg	10.31.2019 02:43	U	2
Fluoranthene	206-44-0	**0.181**	0.00333	mg/kg	10.31.2019 02:43		2
Fluorene	86-73-7	BRL	0.00333	mg/kg	10.31.2019 02:43	U	2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0541**	0.00333	mg/kg	10.31.2019 02:43		2
Naphthalene	91-20-3	BRL	0.0333	mg/kg	10.31.2019 02:43	U	2
Phenanthrene	85-01-8	**0.0744**	0.00333	mg/kg	10.31.2019 02:43		2
Pyrene	129-00-0	**0.250**	0.00333	mg/kg	10.31.2019 02:43		2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	68	%	31-130	10.31.2019 02:43	
2-Fluorobiphenyl	86	%	51-133	10.31.2019 02:43	
Terphenyl-D14	130	%	46-137	10.31.2019 02:43	

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APS, Phoenix, AZ

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Sample Id: **D-FD03-102819** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-032 Date Collected: 10.28.2019 17:20

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 09:15 Basis: Wet Weight

Seq Number: 3106083 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	10.31.2019 16:08	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 18:00 Basis: Wet Weight

Seq Number: 3106155 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.7**	2.00	mg/kg	11.01.2019 13:07		10
Barium	7440-39-3	**215**	4.00	mg/kg	11.01.2019 13:07		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.01.2019 13:07	U	10
Chromium	7440-47-3	**16.6**	4.00	mg/kg	11.01.2019 13:07		10
Lead	7439-92-1	**15.6**	2.00	mg/kg	11.01.2019 13:07		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.01.2019 13:07	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.01.2019 13:07	U	10

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Sample Id: **D-FD03-102819**
Lab Sample Id: 641446-032

Matrix: Soil
Date Collected: 10.28.2019 17:20

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106011

Date Prep: 10.30.2019 12:00

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	10.31.2019 03:00	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	10.31.2019 03:00	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	10.31.2019 03:00	U	1
Benzo(a)anthracene	56-55-3	**0.00597**	0.00166	mg/kg	10.31.2019 03:00		1
Benzo(a)pyrene	50-32-8	**0.0106**	0.00166	mg/kg	10.31.2019 03:00		1
Benzo(b)fluoranthene	205-99-2	**0.0149**	0.00166	mg/kg	10.31.2019 03:00		1
Benzo(g,h,i)perylene	191-24-2	**0.00603**	0.00166	mg/kg	10.31.2019 03:00		1
Benzo(k)fluoranthene	207-08-9	**0.00427**	0.00166	mg/kg	10.31.2019 03:00		1
Chrysene	218-01-9	**0.00728**	0.00166	mg/kg	10.31.2019 03:00		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	10.31.2019 03:00	U	1
Fluoranthene	206-44-0	**0.0151**	0.00166	mg/kg	10.31.2019 03:00		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	10.31.2019 03:00	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00495**	0.00166	mg/kg	10.31.2019 03:00		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	10.31.2019 03:00	U	1
Phenanthrene	85-01-8	**0.00538**	0.00166	mg/kg	10.31.2019 03:00		1
Pyrene	129-00-0	**0.0224**	0.00166	mg/kg	10.31.2019 03:00		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	91	%	31-130	10.31.2019 03:00	
2-Fluorobiphenyl	105	%	51-133	10.31.2019 03:00	
Terphenyl-D14	133	%	46-137	10.31.2019 03:00	

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Sample Id:	**D-B18-7.0-7.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-033	Date Collected:	10.28.2019 17:30	Sample Depth:	7 - 7.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 09:15	Basis:	Wet Weight
Seq Number:	3106083			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0179	mg/kg	10.31.2019 15:39	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.8**	1.89	mg/kg	11.01.2019 13:10		10
Barium	7440-39-3	**138**	3.77	mg/kg	11.01.2019 13:10		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.01.2019 13:10	U	10
Chromium	7440-47-3	**11.5**	3.77	mg/kg	11.01.2019 13:10		10
Lead	7439-92-1	**17.5**	1.89	mg/kg	11.01.2019 13:10		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.01.2019 13:10	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.01.2019 13:10	U	10

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Sample Id:	**D-B18-7.0-7.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-033	Date Collected:	10.28.2019 17:30	Sample Depth:	7 - 7.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 12:03	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	10.31.2019 03:17	U	1
Acenaphthylene	208-96-8	**0.00688**	0.00167	mg/kg	10.31.2019 03:17		1
Anthracene	120-12-7	**0.00478**	0.00167	mg/kg	10.31.2019 03:17		1
Benzo(a)anthracene	56-55-3	**0.0195**	0.00167	mg/kg	10.31.2019 03:17		1
Benzo(a)pyrene	50-32-8	**0.0353**	0.00167	mg/kg	10.31.2019 03:17		1
Benzo(b)fluoranthene	205-99-2	**0.0528**	0.00167	mg/kg	10.31.2019 03:17		1
Benzo(g,h,i)perylene	191-24-2	**0.0210**	0.00167	mg/kg	10.31.2019 03:17		1
Benzo(k)fluoranthene	207-08-9	**0.0151**	0.00167	mg/kg	10.31.2019 03:17		1
Chrysene	218-01-9	**0.0250**	0.00167	mg/kg	10.31.2019 03:17		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	10.31.2019 03:17	U	1
Fluoranthene	206-44-0	**0.0595**	0.00167	mg/kg	10.31.2019 03:17		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	10.31.2019 03:17	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0169**	0.00167	mg/kg	10.31.2019 03:17		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	10.31.2019 03:17	U	1
Phenanthrene	85-01-8	**0.0260**	0.00167	mg/kg	10.31.2019 03:17		1
Pyrene	129-00-0	**0.0872**	0.00167	mg/kg	10.31.2019 03:17		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	66	%	31-130	10.31.2019 03:17	
2-Fluorobiphenyl	82	%	51-133	10.31.2019 03:17	
Terphenyl-D14	121	%	46-137	10.31.2019 03:17	

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APS, Phoenix, AZ

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Sample Id: **D-B14-1.0-1.5**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-034
Date Collected: 10.29.2019 08:15
Sample Depth: 1 - 1.5 ft

Analytical Method: Total Cyanide by SW 9012
Prep Method: E335.4P
Tech: KCS
% Moisture:
Analyst: KCS
Date Prep: 11.01.2019 14:00
Basis: Wet Weight
Seq Number: 3106209
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0554	mg/kg	11.01.2019 15:48	U	1

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 08:25
Basis: Wet Weight
Seq Number: 3106078
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0238**	0.0179	mg/kg	10.31.2019 14:01		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 18:00
Basis: Wet Weight
Seq Number: 3106155
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**10.9**	1.85	mg/kg	11.01.2019 13:13		10
Barium	7440-39-3	**200**	3.70	mg/kg	11.01.2019 13:13		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.01.2019 13:13	U	10
Chromium	7440-47-3	**9.32**	3.70	mg/kg	11.01.2019 13:13		10
Lead	7439-92-1	**48.7**	1.85	mg/kg	11.01.2019 13:13		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.01.2019 13:13	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.01.2019 13:13	U	10

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B14-1.0-1.5** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-034 Date Collected: 10.29.2019 08:15 Sample Depth: 1 - 1.5 ft

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106060

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	10.31.2019 11:24		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.03**		SU	10.31.2019 12:25		1
Temperature	TEMP	**22.6**		Deg C	10.31.2019 12:25	+	1

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B14-1.0-1.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-034	Date Collected:	10.29.2019 08:15	Sample Depth:	1 - 1.5 ft
Analytical Method:	PCBs by SW 8082A			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	SHM	Date Prep:	10.31.2019 09:51	Basis:	Wet Weight
Seq Number:	3106146			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0167	mg/kg	11.01.2019 11:35	U	1
PCB-1221	11104-28-2	BRL	0.0167	mg/kg	11.01.2019 11:35	U	1
PCB-1232	11141-16-5	BRL	0.0167	mg/kg	11.01.2019 11:35	U	1
PCB-1242	53469-21-9	BRL	0.0167	mg/kg	11.01.2019 11:35	U	1
PCB-1248	12672-29-6	BRL	0.0167	mg/kg	11.01.2019 11:35	U	1
PCB-1254	11097-69-1	BRL	0.0167	mg/kg	11.01.2019 11:35	U	1
PCB-1260	11096-82-5	BRL	0.0167	mg/kg	11.01.2019 11:35	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	95	%	39-125	11.01.2019 11:35	
Tetrachloro-m-xylene	50	%	37-124	11.01.2019 11:35	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B14-1.0-1.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-034	Date Collected:	10.29.2019 08:15	Sample Depth:	1 - 1.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 12:06	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	10.31.2019 03:33	U	1
Acenaphthylene	208-96-8	**0.00704**	0.00167	mg/kg	10.31.2019 03:33		1
Anthracene	120-12-7	**0.0102**	0.00167	mg/kg	10.31.2019 03:33		1
Benzo(a)anthracene	56-55-3	**0.0170**	0.00167	mg/kg	10.31.2019 03:33		1
Benzo(a)pyrene	50-32-8	**0.0157**	0.00167	mg/kg	10.31.2019 03:33		1
Benzo(b)fluoranthene	205-99-2	**0.0440**	0.00167	mg/kg	10.31.2019 03:33		1
Benzo(g,h,i)perylene	191-24-2	**0.00841**	0.00167	mg/kg	10.31.2019 03:33		1
Benzo(k)fluoranthene	207-08-9	**0.0109**	0.00167	mg/kg	10.31.2019 03:33		1
Chrysene	218-01-9	**0.0228**	0.00167	mg/kg	10.31.2019 03:33		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	10.31.2019 03:33	U	1
Fluoranthene	206-44-0	**0.0393**	0.00167	mg/kg	10.31.2019 03:33		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	10.31.2019 03:33	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00810**	0.00167	mg/kg	10.31.2019 03:33		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	10.31.2019 03:33	U	1
Phenanthrene	85-01-8	**0.00637**	0.00167	mg/kg	10.31.2019 03:33		1
Pyrene	129-00-0	**0.0451**	0.00167	mg/kg	10.31.2019 03:33		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	86	%	31-130	10.31.2019 03:33	
2-Fluorobiphenyl	100	%	51-133	10.31.2019 03:33	
Terphenyl-D14	129	%	46-137	10.31.2019 03:33	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B14-1.0-1.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-034	Date Collected:	10.29.2019 08:15	Sample Depth:	1 - 1.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	10.30.2019 15:00	Basis:	Wet Weight
Seq Number:	3105931			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,1-Dichloroethane	75-34-3	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,1-Dichloroethene	75-35-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,1-Dichloropropene	563-58-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2-Dibromoethane	106-93-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2-Dichloroethane	107-06-2	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,2-Dichloropropane	78-87-5	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,3-Dichloropropane	142-28-9	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
2,2-Dichloropropane	594-20-7	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
2-Butanone	78-93-3	BRL	1.07	mg/kg	10.30.2019 18:47	U	50
2-Chlorotoluene	95-49-8	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
2-Hexanone	591-78-6	BRL	2.68	mg/kg	10.30.2019 18:47	U	50
4-Chlorotoluene	106-43-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.68	mg/kg	10.30.2019 18:47	U	50
Acetone	67-64-1	BRL	5.35	mg/kg	10.30.2019 18:47	U	50
Benzene	71-43-2	BRL	0.0535	mg/kg	10.30.2019 18:47	U	50
Bromobenzene	108-86-1	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Bromochloromethane	74-97-5	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Bromodichloromethane	75-27-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Bromoform	75-25-2	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Bromomethane	74-83-9	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Carbon Disulfide	75-15-0	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Carbon Tetrachloride	56-23-5	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Chlorobenzene	108-90-7	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Chloroethane	75-00-3	BRL	0.535	mg/kg	10.30.2019 18:47	U	50
Chloroform	67-66-3	BRL	0.268	mg/kg	10.30.2019 18:47	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B14-1.0-1.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-034	Date Collected:	10.29.2019 08:15	Sample Depth:	1 - 1.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	10.30.2019 15:00	Basis:	Wet Weight
Seq Number:	3105931			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Dibromochloromethane	124-48-1	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Dibromomethane	74-95-3	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Ethylbenzene	100-41-4	BRL	0.0535	mg/kg	10.30.2019 18:47	U	50
Hexachlorobutadiene	87-68-3	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.07	mg/kg	10.30.2019 18:47	U	50
Isopropylbenzene	98-82-8	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
m,p-Xylenes	179601-23-1	BRL	0.107	mg/kg	10.30.2019 18:47	U	50
Methylene Chloride	75-09-2	BRL	1.07	mg/kg	10.30.2019 18:47	U	50
MTBE	1634-04-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Naphthalene	91-20-3	BRL	0.535	mg/kg	10.30.2019 18:47	U	50
n-Butylbenzene	104-51-8	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
n-Propylbenzene	103-65-1	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
o-Xylene	95-47-6	BRL	0.0535	mg/kg	10.30.2019 18:47	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Sec-Butylbenzene	135-98-8	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Styrene	100-42-5	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
tert-Butylbenzene	98-06-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Tetrachloroethylene	127-18-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Toluene	108-88-3	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Total Xylenes	1330-20-7	BRL	0.0535	mg/kg	10.30.2019 18:47	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Trichloroethene	79-01-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Trichlorofluoromethane	75-69-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Vinyl Acetate	108-05-4	BRL	0.535	mg/kg	10.30.2019 18:47	U	50
Vinyl Chloride	75-01-4	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
1,3-Butadiene	106-99-0	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Cyclohexane	110-82-7	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Dicyclopentadiene	77-73-6	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Methylcyclohexane	108-87-2	BRL	0.535	mg/kg	10.30.2019 18:47	U	50
n-Hexane	110-54-3	BRL	0.535	mg/kg	10.30.2019 18:47	U	50
4-Ethyltoluene	622-96-8	BRL	0.268	mg/kg	10.30.2019 18:47	U	50
Propene	115-07-1	BRL	0.268	mg/kg	10.30.2019 18:47	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B14-1.0-1.5**
Lab Sample Id: 641446-034

Matrix: Soil
Date Collected: 10.29.2019 08:15

Date Received:10.30.2019 10:00
Sample Depth: 1 - 1.5 ft

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	91	%	53-142	10.30.2019 18:47	
1,2-Dichloroethane-D4	100	%	56-150	10.30.2019 18:47	
Toluene-D8	102	%	70-130	10.30.2019 18:47	
4-Bromofluorobenzene	98	%	68-152	10.30.2019 18:47	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B14-2.5-3.0**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-035	Date Collected:	10.29.2019 08:20	Sample Depth:	2.5 - 3 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 08:25	Basis:	Wet Weight
Seq Number:	3106078			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	10.31.2019 14:03		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.9**	1.96	mg/kg	11.01.2019 13:16		10
Barium	7440-39-3	**93.5**	3.92	mg/kg	11.01.2019 13:16		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.01.2019 13:16	U	10
Chromium	7440-47-3	**9.83**	3.92	mg/kg	11.01.2019 13:16		10
Lead	7439-92-1	**9.49**	1.96	mg/kg	11.01.2019 13:16		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.01.2019 13:16	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.01.2019 13:16	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B14-2.5-3.0**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-035	Date Collected:	10.29.2019 08:20	Sample Depth:	2.5 - 3 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 12:09	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00832	mg/kg	10.31.2019 11:32	U	5
Acenaphthylene	208-96-8	**0.00943**	0.00832	mg/kg	10.31.2019 11:32		5
Anthracene	120-12-7	**0.00853**	0.00832	mg/kg	10.31.2019 11:32		5
Benzo(a)anthracene	56-55-3	**0.0144**	0.00832	mg/kg	10.31.2019 11:32		5
Benzo(a)pyrene	50-32-8	**0.0165**	0.00832	mg/kg	10.31.2019 11:32		5
Benzo(b)fluoranthene	205-99-2	**0.0212**	0.00832	mg/kg	10.31.2019 11:32		5
Benzo(g,h,i)perylene	191-24-2	**0.143**	0.00832	mg/kg	10.31.2019 11:32		5
Benzo(k)fluoranthene	207-08-9	BRL	0.00832	mg/kg	10.31.2019 11:32	U	5
Chrysene	218-01-9	**0.0129**	0.00832	mg/kg	10.31.2019 11:32		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00832	mg/kg	10.31.2019 11:32	U	5
Fluoranthene	206-44-0	**0.0318**	0.00832	mg/kg	10.31.2019 11:32		5
Fluorene	86-73-7	BRL	0.00832	mg/kg	10.31.2019 11:32	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0209**	0.00832	mg/kg	10.31.2019 11:32		5
Naphthalene	91-20-3	BRL	0.0832	mg/kg	10.31.2019 11:32	U	5
Phenanthrene	85-01-8	**0.0201**	0.00832	mg/kg	10.31.2019 11:32		5
Pyrene	129-00-0	**0.0343**	0.00832	mg/kg	10.31.2019 11:32		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	101	%	31-130	10.31.2019 11:32	
2-Fluorobiphenyl	99	%	51-133	10.31.2019 11:32	
Terphenyl-D14	100	%	46-137	10.31.2019 11:32	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B14-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-036	Date Collected:	10.29.2019 09:15	Sample Depth:	5 - 5.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 08:25	Basis:	Wet Weight
Seq Number:	3106078			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	10.31.2019 14:05		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**25.5**	1.75	mg/kg	11.01.2019 13:19		10
Barium	7440-39-3	**321**	3.51	mg/kg	11.01.2019 13:19		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.01.2019 13:19	U	10
Chromium	7440-47-3	**16.8**	3.51	mg/kg	11.01.2019 13:19		10
Lead	7439-92-1	**13.1**	1.75	mg/kg	11.01.2019 13:19		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.01.2019 13:19	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.01.2019 13:19	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B14-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-036	Date Collected:	10.29.2019 09:15	Sample Depth:	5 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 12:12	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	10.31.2019 12:05	U	1
Acenaphthylene	208-96-8	**0.00422**	0.00167	mg/kg	10.31.2019 12:05		1
Anthracene	120-12-7	**0.00234**	0.00167	mg/kg	10.31.2019 12:05		1
Benzo(a)anthracene	56-55-3	**0.00726**	0.00167	mg/kg	10.31.2019 12:05		1
Benzo(a)pyrene	50-32-8	**0.0162**	0.00167	mg/kg	10.31.2019 12:05		1
Benzo(b)fluoranthene	205-99-2	**0.0181**	0.00167	mg/kg	10.31.2019 12:05		1
Benzo(g,h,i)perylene	191-24-2	**0.0450**	0.00167	mg/kg	10.31.2019 12:05		1
Benzo(k)fluoranthene	207-08-9	**0.00539**	0.00167	mg/kg	10.31.2019 12:05		1
Chrysene	218-01-9	**0.00966**	0.00167	mg/kg	10.31.2019 12:05		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	10.31.2019 12:05	U	1
Fluoranthene	206-44-0	**0.0213**	0.00167	mg/kg	10.31.2019 12:05		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	10.31.2019 12:05	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0191**	0.00167	mg/kg	10.31.2019 12:05		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	10.31.2019 12:05	U	1
Phenanthrene	85-01-8	**0.0131**	0.00167	mg/kg	10.31.2019 12:05		1
Pyrene	129-00-0	**0.0293**	0.00167	mg/kg	10.31.2019 12:05		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	86	%	31-130	10.31.2019 12:05	
2-Fluorobiphenyl	92	%	51-133	10.31.2019 12:05	
Terphenyl-D14	104	%	46-137	10.31.2019 12:05	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B16-2.5-3.0**
Matrix: Soil
Date Received:10.30.2019 10:00
Lab Sample Id: 641446-037
Date Collected: 10.29.2019 09:50
Sample Depth: 2.5 - 3 ft

Analytical Method: Total Cyanide by SW 9012
Prep Method: E335.4P
Tech: KCS
% Moisture:
Analyst: KCS
Date Prep: 11.01.2019 14:00
Basis: Wet Weight
Seq Number: 3106209
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.144**	0.0528	mg/kg	11.01.2019 15:49		1

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 10.31.2019 08:25
Basis: Wet Weight
Seq Number: 3106078
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0416**	0.0196	mg/kg	10.31.2019 14:10		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 10.31.2019 18:00
Basis: Wet Weight
Seq Number: 3106155
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.5**	1.67	mg/kg	11.01.2019 13:22		10
Barium	7440-39-3	**117**	3.33	mg/kg	11.01.2019 13:22		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.01.2019 13:22	U	10
Chromium	7440-47-3	**11.1**	3.33	mg/kg	11.01.2019 13:22		10
Lead	7439-92-1	**42.5**	1.67	mg/kg	11.01.2019 13:22		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.01.2019 13:22	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.01.2019 13:22	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B16-2.5-3.0** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-037 Date Collected: 10.29.2019 09:50 Sample Depth: 2.5 - 3 ft

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106060

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	10.31.2019 11:40		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.56**		SU	10.31.2019 12:25		1
Temperature	TEMP	**22.9**		Deg C	10.31.2019 12:25	+	1

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B16-2.5-3.0**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-037	Date Collected:	10.29.2019 09:50	Sample Depth:	2.5 - 3 ft
Analytical Method:	PCBs by SW 8082A			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	SHM	Date Prep:	10.31.2019 09:54	Basis:	Wet Weight
Seq Number:	3106146			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0166	mg/kg	11.01.2019 11:58	U	1
PCB-1221	11104-28-2	BRL	0.0166	mg/kg	11.01.2019 11:58	U	1
PCB-1232	11141-16-5	BRL	0.0166	mg/kg	11.01.2019 11:58	U	1
PCB-1242	53469-21-9	BRL	0.0166	mg/kg	11.01.2019 11:58	U	1
PCB-1248	12672-29-6	**0.0284**	0.0166	mg/kg	11.01.2019 11:58		1
PCB-1254	11097-69-1	BRL	0.0166	mg/kg	11.01.2019 11:58	U	1
PCB-1260	11096-82-5	BRL	0.0166	mg/kg	11.01.2019 11:58	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	121	%	39-125	11.01.2019 11:58	
Tetrachloro-m-xylene	64	%	37-124	11.01.2019 11:58	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B16-2.5-3.0**
Lab Sample Id: 641446-037

Matrix: Soil
Date Collected: 10.29.2019 09:50

Date Received:10.30.2019 10:00
Sample Depth: 2.5 - 3 ft

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106011

Date Prep: 10.30.2019 12:15

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	10.31.2019 12:22	U	10
Acenaphthylene	208-96-8	**0.112**	0.0167	mg/kg	10.31.2019 12:22		10
Anthracene	120-12-7	**0.0737**	0.0167	mg/kg	10.31.2019 12:22		10
Benzo(a)anthracene	56-55-3	**0.238**	0.0167	mg/kg	10.31.2019 12:22		10
Benzo(a)pyrene	50-32-8	**0.433**	0.0167	mg/kg	10.31.2019 12:22		10
Benzo(b)fluoranthene	205-99-2	**0.486**	0.0167	mg/kg	10.31.2019 12:22		10
Benzo(g,h,i)perylene	191-24-2	**0.377**	0.0167	mg/kg	10.31.2019 12:22		10
Benzo(k)fluoranthene	207-08-9	**0.146**	0.0167	mg/kg	10.31.2019 12:22		10
Chrysene	218-01-9	**0.326**	0.0167	mg/kg	10.31.2019 12:22		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	10.31.2019 12:22	U	10
Fluoranthene	206-44-0	**0.743**	0.0167	mg/kg	10.31.2019 12:22		10
Fluorene	86-73-7	**0.0249**	0.0167	mg/kg	10.31.2019 12:22		10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.263**	0.0167	mg/kg	10.31.2019 12:22		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	10.31.2019 12:22	U	10
Phenanthrene	85-01-8	**0.526**	0.0167	mg/kg	10.31.2019 12:22		10
Pyrene	129-00-0	**0.917**	0.0167	mg/kg	10.31.2019 12:22		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	62	%	31-130	10.31.2019 12:22	
2-Fluorobiphenyl	76	%	51-133	10.31.2019 12:22	
Terphenyl-D14	75	%	46-137	10.31.2019 12:22	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B16-2.5-3.0**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-037	Date Collected:	10.29.2019 09:50	Sample Depth:	2.5 - 3 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	10.30.2019 15:00	Basis:	Wet Weight
Seq Number:	3105931			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,1-Dichloroethane	75-34-3	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,1-Dichloroethene	75-35-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,1-Dichloropropene	563-58-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2-Dibromoethane	106-93-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2-Dichloroethane	107-06-2	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,2-Dichloropropane	78-87-5	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,3-Dichloropropane	142-28-9	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
2,2-Dichloropropane	594-20-7	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
2-Butanone	78-93-3	BRL	1.07	mg/kg	10.30.2019 19:08	U	50
2-Chlorotoluene	95-49-8	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
2-Hexanone	591-78-6	BRL	2.68	mg/kg	10.30.2019 19:08	U	50
4-Chlorotoluene	106-43-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.68	mg/kg	10.30.2019 19:08	U	50
Acetone	67-64-1	BRL	5.35	mg/kg	10.30.2019 19:08	U	50
Benzene	71-43-2	BRL	0.0535	mg/kg	10.30.2019 19:08	U	50
Bromobenzene	108-86-1	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Bromochloromethane	74-97-5	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Bromodichloromethane	75-27-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Bromoform	75-25-2	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Bromomethane	74-83-9	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Carbon Disulfide	75-15-0	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Carbon Tetrachloride	56-23-5	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Chlorobenzene	108-90-7	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Chloroethane	75-00-3	BRL	0.535	mg/kg	10.30.2019 19:08	U	50
Chloroform	67-66-3	BRL	0.268	mg/kg	10.30.2019 19:08	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B16-2.5-3.0**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-037	Date Collected:	10.29.2019 09:50	Sample Depth:	2.5 - 3 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	10.30.2019 15:00	Basis:	Wet Weight
Seq Number:	3105931			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Dibromochloromethane	124-48-1	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Dibromomethane	74-95-3	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Ethylbenzene	100-41-4	BRL	0.0535	mg/kg	10.30.2019 19:08	U	50
Hexachlorobutadiene	87-68-3	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.07	mg/kg	10.30.2019 19:08	U	50
Isopropylbenzene	98-82-8	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
m,p-Xylenes	179601-23-1	BRL	0.107	mg/kg	10.30.2019 19:08	U	50
Methylene Chloride	75-09-2	BRL	1.07	mg/kg	10.30.2019 19:08	U	50
MTBE	1634-04-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Naphthalene	91-20-3	BRL	0.535	mg/kg	10.30.2019 19:08	U	50
n-Butylbenzene	104-51-8	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
n-Propylbenzene	103-65-1	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
o-Xylene	95-47-6	BRL	0.0535	mg/kg	10.30.2019 19:08	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Sec-Butylbenzene	135-98-8	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Styrene	100-42-5	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
tert-Butylbenzene	98-06-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Tetrachloroethylene	127-18-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Toluene	108-88-3	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Total Xylenes	1330-20-7	BRL	0.0535	mg/kg	10.30.2019 19:08	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Trichloroethene	79-01-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Trichlorofluoromethane	75-69-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Vinyl Acetate	108-05-4	BRL	0.535	mg/kg	10.30.2019 19:08	U	50
Vinyl Chloride	75-01-4	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
1,3-Butadiene	106-99-0	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Cyclohexane	110-82-7	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Dicyclopentadiene	77-73-6	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Methylcyclohexane	108-87-2	BRL	0.535	mg/kg	10.30.2019 19:08	U	50
n-Hexane	110-54-3	BRL	0.535	mg/kg	10.30.2019 19:08	U	50
4-Ethyltoluene	622-96-8	BRL	0.268	mg/kg	10.30.2019 19:08	U	50
Propene	115-07-1	BRL	0.268	mg/kg	10.30.2019 19:08	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B16-2.5-3.0**
Lab Sample Id: 641446-037

Matrix: Soil
Date Collected: 10.29.2019 09:50

Date Received:10.30.2019 10:00
Sample Depth: 2.5 - 3 ft

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	89	%	53-142	10.30.2019 19:08	
1,2-Dichloroethane-D4	99	%	56-150	10.30.2019 19:08	
Toluene-D8	102	%	70-130	10.30.2019 19:08	
4-Bromofluorobenzene	96	%	68-152	10.30.2019 19:08	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102919** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-038 Date Collected: 10.29.2019 10:00

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P

Tech: KCS % Moisture:

Analyst: KCS Date Prep: 11.01.2019 14:00 Basis: Wet Weight

Seq Number: 3106209 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.109**	0.0631	mg/kg	11.01.2019 15:50		1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 10.31.2019 08:25 Basis: Wet Weight

Seq Number: 3106078 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0320**	0.0169	mg/kg	10.31.2019 14:12		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 10.31.2019 18:00 Basis: Wet Weight

Seq Number: 3106155 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.24**	1.96	mg/kg	11.01.2019 13:25		10
Barium	7440-39-3	**101**	3.92	mg/kg	11.01.2019 13:25		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.01.2019 13:25	U	10
Chromium	7440-47-3	**11.6**	3.92	mg/kg	11.01.2019 13:25		10
Lead	7439-92-1	**31.6**	1.96	mg/kg	11.01.2019 13:25		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.01.2019 13:25	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.01.2019 13:25	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102919** Matrix: Soil Date Received:10.30.2019 10:00

Lab Sample Id: 641446-038 Date Collected: 10.29.2019 10:00

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106060

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	10.31.2019 11:57		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.45**		SU	10.31.2019 12:25		1
Temperature	TEMP	**20.7**		Deg C	10.31.2019 12:25	+	1

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-FD01-102919**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-038	Date Collected:	10.29.2019 10:00		
Analytical Method:	PCBs by SW 8082A			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	SHM	Date Prep:	10.31.2019 09:57	Basis:	Wet Weight
Seq Number:	3106146			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0167	mg/kg	11.01.2019 12:09	U	1
PCB-1221	11104-28-2	BRL	0.0167	mg/kg	11.01.2019 12:09	U	1
PCB-1232	11141-16-5	BRL	0.0167	mg/kg	11.01.2019 12:09	U	1
PCB-1242	53469-21-9	BRL	0.0167	mg/kg	11.01.2019 12:09	U	1
PCB-1248	12672-29-6	**0.0378**	0.0167	mg/kg	11.01.2019 12:09		1
PCB-1254	11097-69-1	BRL	0.0167	mg/kg	11.01.2019 12:09	U	1
PCB-1260	11096-82-5	BRL	0.0167	mg/kg	11.01.2019 12:09	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	99	%	39-125	11.01.2019 12:09	
Tetrachloro-m-xylene	55	%	37-124	11.01.2019 12:09	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102919**
Lab Sample Id: 641446-038

Matrix: Soil
Date Collected: 10.29.2019 10:00

Date Received:10.30.2019 10:00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106011

Date Prep: 10.30.2019 12:18

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00833	mg/kg	10.31.2019 12:39	U	5
Acenaphthylene	208-96-8	**0.184**	0.00833	mg/kg	10.31.2019 12:39		5
Anthracene	120-12-7	**0.121**	0.00833	mg/kg	10.31.2019 12:39		5
Benzo(a)anthracene	56-55-3	**0.338**	0.00833	mg/kg	10.31.2019 12:39		5
Benzo(a)pyrene	50-32-8	**0.641**	0.00833	mg/kg	10.31.2019 12:39		5
Benzo(b)fluoranthene	205-99-2	**0.766**	0.00833	mg/kg	10.31.2019 12:39		5
Benzo(g,h,i)perylene	191-24-2	**0.468**	0.00833	mg/kg	10.31.2019 12:39		5
Benzo(k)fluoranthene	207-08-9	**0.178**	0.00833	mg/kg	10.31.2019 12:39		5
Chrysene	218-01-9	**0.434**	0.00833	mg/kg	10.31.2019 12:39		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00833	mg/kg	10.31.2019 12:39	U	5
Fluoranthene	206-44-0	**1.04**	0.00833	mg/kg	10.31.2019 12:39		5
Fluorene	86-73-7	**0.0441**	0.00833	mg/kg	10.31.2019 12:39		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.329**	0.00833	mg/kg	10.31.2019 12:39		5
Naphthalene	91-20-3	**0.136**	0.0833	mg/kg	10.31.2019 12:39		5
Phenanthrene	85-01-8	**0.745**	0.00833	mg/kg	10.31.2019 12:39		5
Pyrene	129-00-0	**1.27**	0.00833	mg/kg	10.31.2019 12:39		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	67	%	31-130	10.31.2019 12:39	
2-Fluorobiphenyl	80	%	51-133	10.31.2019 12:39	
Terphenyl-D14	83	%	46-137	10.31.2019 12:39	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102919**
Lab Sample Id: 641446-038

Matrix: Soil
Date Collected: 10.29.2019 10:00

Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,1-Dichloroethane	75-34-3	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,1-Dichloroethene	75-35-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,1-Dichloropropene	563-58-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2-Dibromoethane	106-93-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2-Dichloroethane	107-06-2	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,2-Dichloropropane	78-87-5	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,3-Dichloropropane	142-28-9	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
2,2-Dichloropropane	594-20-7	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
2-Butanone	78-93-3	BRL	0.996	mg/kg	10.30.2019 19:30	U	50
2-Chlorotoluene	95-49-8	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
2-Hexanone	591-78-6	BRL	2.49	mg/kg	10.30.2019 19:30	U	50
4-Chlorotoluene	106-43-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.49	mg/kg	10.30.2019 19:30	U	50
Acetone	67-64-1	BRL	4.98	mg/kg	10.30.2019 19:30	U	50
Benzene	71-43-2	BRL	0.0498	mg/kg	10.30.2019 19:30	U	50
Bromobenzene	108-86-1	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Bromochloromethane	74-97-5	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Bromodichloromethane	75-27-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Bromoform	75-25-2	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Bromomethane	74-83-9	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Carbon Disulfide	75-15-0	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Carbon Tetrachloride	56-23-5	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Chlorobenzene	108-90-7	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Chloroethane	75-00-3	BRL	0.498	mg/kg	10.30.2019 19:30	U	50
Chloroform	67-66-3	BRL	0.249	mg/kg	10.30.2019 19:30	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102919**
Lab Sample Id: 641446-038

Matrix: Soil
Date Collected: 10.29.2019 10:00

Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Dibromochloromethane	124-48-1	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Dibromomethane	74-95-3	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Ethylbenzene	100-41-4	BRL	0.0498	mg/kg	10.30.2019 19:30	U	50
Hexachlorobutadiene	87-68-3	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.996	mg/kg	10.30.2019 19:30	U	50
Isopropylbenzene	98-82-8	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
m,p-Xylenes	179601-23-1	BRL	0.0996	mg/kg	10.30.2019 19:30	U	50
Methylene Chloride	75-09-2	BRL	0.996	mg/kg	10.30.2019 19:30	U	50
MTBE	1634-04-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Naphthalene	91-20-3	BRL	0.498	mg/kg	10.30.2019 19:30	U	50
n-Butylbenzene	104-51-8	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
n-Propylbenzene	103-65-1	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
o-Xylene	95-47-6	BRL	0.0498	mg/kg	10.30.2019 19:30	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Sec-Butylbenzene	135-98-8	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Styrene	100-42-5	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
tert-Butylbenzene	98-06-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Tetrachloroethylene	127-18-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Toluene	108-88-3	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Total Xylenes	1330-20-7	BRL	0.0498	mg/kg	10.30.2019 19:30	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Trichloroethene	79-01-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Trichlorofluoromethane	75-69-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Vinyl Acetate	108-05-4	BRL	0.498	mg/kg	10.30.2019 19:30	U	50
Vinyl Chloride	75-01-4	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
1,3-Butadiene	106-99-0	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Cyclohexane	110-82-7	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Dicyclopentadiene	77-73-6	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Methylcyclohexane	108-87-2	BRL	0.498	mg/kg	10.30.2019 19:30	U	50
n-Hexane	110-54-3	BRL	0.498	mg/kg	10.30.2019 19:30	U	50
4-Ethyltoluene	622-96-8	BRL	0.249	mg/kg	10.30.2019 19:30	U	50
Propene	115-07-1	BRL	0.249	mg/kg	10.30.2019 19:30	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-102919**
Lab Sample Id: 641446-038

Matrix: Soil
Date Collected: 10.29.2019 10:00

Date Received:10.30.2019 10:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3105931

Date Prep: 10.30.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	88	%	53-142	10.30.2019 19:30	
1,2-Dichloroethane-D4	99	%	56-150	10.30.2019 19:30	
Toluene-D8	102	%	70-130	10.30.2019 19:30	
4-Bromofluorobenzene	97	%	68-152	10.30.2019 19:30	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B16-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-039	Date Collected:	10.29.2019 10:05	Sample Depth:	5 - 5.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 08:25	Basis:	Wet Weight
Seq Number:	3106078			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0225**	0.0196	mg/kg	10.31.2019 14:14		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.2**	1.75	mg/kg	11.01.2019 13:28		10
Barium	7440-39-3	**171**	3.51	mg/kg	11.01.2019 13:28		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.01.2019 13:28	U	10
Chromium	7440-47-3	**14.9**	3.51	mg/kg	11.01.2019 13:28		10
Lead	7439-92-1	**23.7**	1.75	mg/kg	11.01.2019 13:28		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.01.2019 13:28	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.01.2019 13:28	U	10

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B16-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-039	Date Collected:	10.29.2019 10:05	Sample Depth:	5 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 12:21	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00334	mg/kg	10.31.2019 12:56	U	2
Acenaphthylene	208-96-8	**0.0490**	0.00334	mg/kg	10.31.2019 12:56		2
Anthracene	120-12-7	**0.0309**	0.00334	mg/kg	10.31.2019 12:56		2
Benzo(a)anthracene	56-55-3	**0.0920**	0.00334	mg/kg	10.31.2019 12:56		2
Benzo(a)pyrene	50-32-8	**0.174**	0.00334	mg/kg	10.31.2019 12:56		2
Benzo(b)fluoranthene	205-99-2	**0.202**	0.00334	mg/kg	10.31.2019 12:56		2
Benzo(g,h,i)perylene	191-24-2	**0.123**	0.00334	mg/kg	10.31.2019 12:56		2
Benzo(k)fluoranthene	207-08-9	**0.0625**	0.00334	mg/kg	10.31.2019 12:56		2
Chrysene	218-01-9	**0.112**	0.00334	mg/kg	10.31.2019 12:56		2
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00334	mg/kg	10.31.2019 12:56	U	2
Fluoranthene	206-44-0	**0.276**	0.00334	mg/kg	10.31.2019 12:56		2
Fluorene	86-73-7	**0.00932**	0.00334	mg/kg	10.31.2019 12:56		2
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0892**	0.00334	mg/kg	10.31.2019 12:56		2
Naphthalene	91-20-3	**0.0357**	0.0334	mg/kg	10.31.2019 12:56		2
Phenanthrene	85-01-8	**0.177**	0.00334	mg/kg	10.31.2019 12:56		2
Pyrene	129-00-0	**0.338**	0.00334	mg/kg	10.31.2019 12:56		2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	86	%	31-130	10.31.2019 12:56	
2-Fluorobiphenyl	102	%	51-133	10.31.2019 12:56	
Terphenyl-D14	103	%	46-137	10.31.2019 12:56	

Certificate of Analytical Results 641446

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B16-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-039	Date Collected:	10.29.2019 10:05	Sample Depth:	5 - 5.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	10.30.2019 15:00	Basis:	Wet Weight
Seq Number:	3105931			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,1-Dichloroethane	75-34-3	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,1-Dichloroethene	75-35-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,1-Dichloropropene	563-58-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2-Dibromoethane	106-93-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2-Dichloroethane	107-06-2	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,2-Dichloropropane	78-87-5	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,3-Dichloropropane	142-28-9	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
2,2-Dichloropropane	594-20-7	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
2-Butanone	78-93-3	BRL	1.18	mg/kg	10.30.2019 19:51	U	50
2-Chlorotoluene	95-49-8	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
2-Hexanone	591-78-6	BRL	2.96	mg/kg	10.30.2019 19:51	U	50
4-Chlorotoluene	106-43-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.96	mg/kg	10.30.2019 19:51	U	50
Acetone	67-64-1	BRL	5.91	mg/kg	10.30.2019 19:51	U	50
Benzene	71-43-2	BRL	0.0591	mg/kg	10.30.2019 19:51	U	50
Bromobenzene	108-86-1	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Bromochloromethane	74-97-5	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Bromodichloromethane	75-27-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Bromoform	75-25-2	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Bromomethane	74-83-9	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Carbon Disulfide	75-15-0	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Carbon Tetrachloride	56-23-5	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Chlorobenzene	108-90-7	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Chloroethane	75-00-3	BRL	0.591	mg/kg	10.30.2019 19:51	U	50
Chloroform	67-66-3	BRL	0.296	mg/kg	10.30.2019 19:51	U	50

Certificate of Analytical Results 641446

APS, Phoenix, AZ

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Sample Id:	**D-B16-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-039	Date Collected:	10.29.2019 10:05	Sample Depth:	5 - 5.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	10.30.2019 15:00	Basis:	Wet Weight
Seq Number:	3105931			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Dibromochloromethane	124-48-1	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Dibromomethane	74-95-3	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Ethylbenzene	100-41-4	BRL	0.0591	mg/kg	10.30.2019 19:51	U	50
Hexachlorobutadiene	87-68-3	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.18	mg/kg	10.30.2019 19:51	U	50
Isopropylbenzene	98-82-8	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
m,p-Xylenes	179601-23-1	BRL	0.118	mg/kg	10.30.2019 19:51	U	50
Methylene Chloride	75-09-2	BRL	1.18	mg/kg	10.30.2019 19:51	U	50
MTBE	1634-04-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Naphthalene	91-20-3	BRL	0.591	mg/kg	10.30.2019 19:51	U	50
n-Butylbenzene	104-51-8	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
n-Propylbenzene	103-65-1	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
o-Xylene	95-47-6	BRL	0.0591	mg/kg	10.30.2019 19:51	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Sec-Butylbenzene	135-98-8	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Styrene	100-42-5	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
tert-Butylbenzene	98-06-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Tetrachloroethylene	127-18-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Toluene	108-88-3	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Total Xylenes	1330-20-7	BRL	0.0591	mg/kg	10.30.2019 19:51	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Trichloroethene	79-01-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Trichlorofluoromethane	75-69-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Vinyl Acetate	108-05-4	BRL	0.591	mg/kg	10.30.2019 19:51	U	50
Vinyl Chloride	75-01-4	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
1,3-Butadiene	106-99-0	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Cyclohexane	110-82-7	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Dicyclopentadiene	77-73-6	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Methylcyclohexane	108-87-2	BRL	0.591	mg/kg	10.30.2019 19:51	U	50
n-Hexane	110-54-3	BRL	0.591	mg/kg	10.30.2019 19:51	U	50
4-Ethyltoluene	622-96-8	BRL	0.296	mg/kg	10.30.2019 19:51	U	50
Propene	115-07-1	BRL	0.296	mg/kg	10.30.2019 19:51	U	50

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Sample Id:	**D-B16-5.0-5.5**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-039	Date Collected:	10.29.2019 10:05	Sample Depth:	5 - 5.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	10.30.2019 15:00	Basis:	Wet Weight
Seq Number:	3105931			SUB:	T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	88	%	53-142	10.30.2019 19:51	
1,2-Dichloroethane-D4	100	%	56-150	10.30.2019 19:51	
Toluene-D8	103	%	70-130	10.30.2019 19:51	
4-Bromofluorobenzene	98	%	68-152	10.30.2019 19:51	

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Sample Id:	**D-B22-2.5-3.0**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-040	Date Collected:	10.29.2019 10:15	Sample Depth:	2.5 - 3 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	10.31.2019 08:25	Basis:	Wet Weight
Seq Number:	3106078			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	10.31.2019 14:16		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	10.31.2019 18:00	Basis:	Wet Weight
Seq Number:	3106155			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.4**	1.96	mg/kg	11.01.2019 13:31		10
Barium	7440-39-3	**127**	3.92	mg/kg	11.01.2019 13:31		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.01.2019 13:31	U	10
Chromium	7440-47-3	**13.1**	3.92	mg/kg	11.01.2019 13:31		10
Lead	7439-92-1	**11.2**	1.96	mg/kg	11.01.2019 13:31		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.01.2019 13:31	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.01.2019 13:31	U	10

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Sample Id:	**D-B22-2.5-3.0**	Matrix:	Soil	Date Received:	10.30.2019 10:00
Lab Sample Id:	641446-040	Date Collected:	10.29.2019 10:15	Sample Depth:	2.5 - 3 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	10.30.2019 12:24	Basis:	Wet Weight
Seq Number:	3106011			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	10.31.2019 13:30	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	10.31.2019 13:30	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	88	%	31-130	10.31.2019 13:30	
2-Fluorobiphenyl	97	%	51-133	10.31.2019 13:30	
Terphenyl-D14	107	%	46-137	10.31.2019 13:30	

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Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3106209 Matrix: Solid Date Prep: 11.01.2019
MB Sample Id: 7689428-1-BLK LCS Sample Id: 7689428-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Cyanide, Total	<0.0298	1.20	1.12	93	85-115	mg/kg	11.01.2019 15:39	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106078 Matrix: Solid Date Prep: 10.31.2019
MB Sample Id: 7689296-1-BLK LCS Sample Id: 7689296-1-BKS LCSD Sample Id: 7689296-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0185	0.185	0.175	95	0.175	95	80-120	0	20	mg/kg	10.31.2019 13:03	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106083 Matrix: Solid Date Prep: 10.31.2019
MB Sample Id: 7689315-1-BLK LCS Sample Id: 7689315-1-BKS LCSD Sample Id: 7689315-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00384	0.200	0.214	107	0.221	111	80-120	3	20	mg/kg	10.31.2019 14:19	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106077 Matrix: Solid Date Prep: 10.31.2019
MB Sample Id: 7689331-1-BLK LCS Sample Id: 7689331-1-BKS LCSD Sample Id: 7689331-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00384	0.200	0.200	100	0.201	101	80-120	0	20	mg/kg	10.31.2019 16:14	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106078 Matrix: Solid Date Prep: 10.31.2019
Parent Sample Id: 641141-001 MS Sample Id: 641141-001 S MSD Sample Id: 641141-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00435	0.167	0.159	93	0.160	93	75-125	1	20	mg/kg	10.31.2019 13:09	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106083 Matrix: Soil Date Prep: 10.31.2019
Parent Sample Id: 641446-029 MS Sample Id: 641446-029 S MSD Sample Id: 641446-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00326	0.169	0.204	121	0.203	122	75-125	0	20	mg/kg	10.31.2019 14:25	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106083 Matrix: Soil Date Prep: 10.31.2019
Parent Sample Id: 641446-033 MS Sample Id: 641446-033 S MSD Sample Id: 641446-033 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00875	0.196	0.205	100	0.202	101	75-125	1	20	mg/kg	10.31.2019 15:41	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106077 Matrix: Soil Date Prep: 10.31.2019
Parent Sample Id: 641446-001 MS Sample Id: 641446-001 S MSD Sample Id: 641446-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0211	0.167	0.186	99	0.186	99	75-125	0	20	mg/kg	10.31.2019 16:19	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106077 Matrix: Soil Date Prep: 10.31.2019
Parent Sample Id: 641446-002 MS Sample Id: 641446-002 S MSD Sample Id: 641446-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0294	0.189	0.195	88	0.217	101	75-125	11	20	mg/kg	10.31.2019 16:55	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106129 Matrix: Solid Date Prep: 10.31.2019
MB Sample Id: 7689357-1-BLK LCS Sample Id: 7689357-1-BKS LCSD Sample Id: 7689357-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	9.80	98	9.70	97	80-120	1	20	mg/kg	10.31.2019 19:36	
Barium	<0.400	10.0	9.80	98	9.62	96	80-120	2	20	mg/kg	10.31.2019 19:36	
Cadmium	<0.200	10.0	10.0	100	9.89	99	80-120	1	20	mg/kg	10.31.2019 19:36	
Chromium	<0.400	10.0	10.0	100	9.87	99	80-120	1	20	mg/kg	10.31.2019 19:36	
Lead	<0.200	10.0	9.75	98	9.72	97	80-120	0	20	mg/kg	10.31.2019 19:36	
Selenium	<0.200	10.0	9.82	98	9.67	97	80-120	2	20	mg/kg	10.31.2019 19:36	
Silver	<0.200	5.00	5.16	103	5.08	102	80-120	2	20	mg/kg	10.31.2019 19:36	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106155 Matrix: Solid Date Prep: 10.31.2019
MB Sample Id: 7689359-1-BLK LCS Sample Id: 7689359-1-BKS LCSD Sample Id: 7689359-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	9.74	97	9.86	99	80-120	1	20	mg/kg	11.01.2019 12:05	
Barium	<0.400	10.0	9.73	97	9.70	97	80-120	0	20	mg/kg	11.01.2019 12:05	
Cadmium	<0.200	10.0	9.82	98	9.78	98	80-120	0	20	mg/kg	11.01.2019 12:05	
Chromium	<0.400	10.0	9.79	98	9.77	98	80-120	0	20	mg/kg	11.01.2019 12:05	
Lead	<0.200	10.0	9.70	97	9.79	98	80-120	1	20	mg/kg	11.01.2019 12:05	
Selenium	<0.200	10.0	9.77	98	9.93	99	80-120	2	20	mg/kg	11.01.2019 12:05	
Silver	<0.200	5.00	4.98	100	4.97	99	80-120	0	20	mg/kg	11.01.2019 12:05	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106129 Matrix: Soil Date Prep: 10.31.2019
Parent Sample Id: 641446-001 MS Sample Id: 641446-001 S MSD Sample Id: 641446-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	9.08	9.62	18.3	96	17.5	91	75-125	4	30	mg/kg	10.31.2019 19:45	
Barium	186	9.62	188	21	184	0	75-125	2	30	mg/kg	10.31.2019 19:45	X
Cadmium	<1.92	9.62	10.8	112	10.3	111	75-125	5	30	mg/kg	10.31.2019 19:45	
Chromium	10.3	9.62	20.2	103	19.5	99	75-125	4	30	mg/kg	10.31.2019 19:45	
Lead	34.8	9.62	43.7	93	42.0	78	75-125	4	30	mg/kg	10.31.2019 19:45	
Selenium	<1.92	9.62	10.3	107	10.0	108	75-125	3	30	mg/kg	10.31.2019 19:45	
Silver	<1.92	4.81	5.18	108	4.94	107	75-125	5	30	mg/kg	10.31.2019 19:45	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106155 Matrix: Soil Date Prep: 10.31.2019
Parent Sample Id: 641446-029 MS Sample Id: 641446-029 S MSD Sample Id: 641446-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	13.0	8.62	21.6	100	20.1	84	75-125	7	30	mg/kg	11.01.2019 12:14	
Barium	174	8.62	180	70	168	0	75-125	7	30	mg/kg	11.01.2019 12:14	X
Cadmium	<1.72	8.62	9.35	108	8.73	103	75-125	7	30	mg/kg	11.01.2019 12:14	
Chromium	14.1	8.62	22.8	101	21.3	85	75-125	7	30	mg/kg	11.01.2019 12:14	
Lead	29.9	8.62	38.1	95	35.5	66	75-125	7	30	mg/kg	11.01.2019 12:14	X
Selenium	<1.72	8.62	9.52	110	8.80	104	75-125	8	30	mg/kg	11.01.2019 12:14	
Silver	<1.72	4.31	4.95	115	4.52	107	75-125	9	30	mg/kg	11.01.2019 12:14	

Analytical Method: **Flash Point (CC) SW-846 1010**
Seq Number: 3106060 Matrix: Solid
Parent Sample Id: 641074-003 MD Sample Id: 641074-003 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	>180	>180	0	25	Deg F	10.31.2019 10:00	

Analytical Method: **Paint Filter Liquids Test by SW 9095B**
Seq Number: 3106171 Matrix: Soil
Parent Sample Id: 641446-014 MD Sample Id: 641446-014 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	0		11.01.2019 15:00	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3106041 Matrix: Soil
Parent Sample Id: 641446-014 MD Sample Id: 641446-014 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.38	8.39	0	20	SU	10.31.2019 12:25	
Temperature	21.6	21.6	0	25	Deg C	10.31.2019 12:25	

Analytical Method: **PCBs by SW 8082A** Prep Method: SW3550
Seq Number: 3106146 Matrix: Solid Date Prep: 10.31.2019
MB Sample Id: 7689316-1-BLK LCS Sample Id: 7689316-1-BKS LCSD Sample Id: 7689316-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0167	0.167	0.112	67	0.125	76	54-121	11	20	mg/kg	10.31.2019 14:20	
PCB-1260	<0.0167	0.167	0.138	83	0.144	88	41-126	4	20	mg/kg	10.31.2019 14:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	93		86		87		39-125	%	10.31.2019 14:20
Tetrachloro-m-xylene	67		40		51		37-124	%	10.31.2019 14:20

Analytical Method: **PCBs by SW 8082A** Prep Method: SW3550
Seq Number: 3106146 Matrix: Soil Date Prep: 10.31.2019
Parent Sample Id: 641446-029 MS Sample Id: 641446-029 S MSD Sample Id: 641446-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0166	0.166	0.147	89	0.150	90	54-121	2	20	mg/kg	11.01.2019 11:01	
PCB-1260	<0.0166	0.166	0.140	84	0.137	83	41-126	2	20	mg/kg	11.01.2019 11:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	80		83		39-125	%	11.01.2019 11:01
Tetrachloro-m-xylene	61		61		37-124	%	11.01.2019 11:01

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 641446

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106008 Matrix: Solid Date Prep: 10.30.2019

MB Sample Id: 7689271-1-BLK LCS Sample Id: 7689271-1-BKS LCSD Sample Id: 7689271-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0274	82	0.0275	83	42-116	0	25	mg/kg	10.30.2019 15:19	
Acenaphthylene	<0.00167	0.0333	0.0272	82	0.0273	82	42-121	0	25	mg/kg	10.30.2019 15:19	
Anthracene	<0.00167	0.0333	0.0279	84	0.0280	84	44-120	0	25	mg/kg	10.30.2019 15:19	
Benzo(a)anthracene	<0.00167	0.0333	0.0279	84	0.0287	86	52-121	3	25	mg/kg	10.30.2019 15:19	
Benzo(a)pyrene	<0.00167	0.0333	0.0288	86	0.0297	89	50-128	3	25	mg/kg	10.30.2019 15:19	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0301	90	0.0299	90	49-137	1	25	mg/kg	10.30.2019 15:19	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0296	89	0.0305	92	47-132	3	25	mg/kg	10.30.2019 15:19	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0276	83	0.0294	88	48-133	6	25	mg/kg	10.30.2019 15:19	
Chrysene	<0.00167	0.0333	0.0269	81	0.0279	84	54-113	4	25	mg/kg	10.30.2019 15:19	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0294	88	0.0303	91	48-133	3	25	mg/kg	10.30.2019 15:19	
Fluoranthene	<0.00167	0.0333	0.0295	89	0.0293	88	54-128	1	25	mg/kg	10.30.2019 15:19	
Fluorene	<0.00167	0.0333	0.0276	83	0.0276	83	44-118	0	25	mg/kg	10.30.2019 15:19	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0297	89	0.0306	92	49-129	3	25	mg/kg	10.30.2019 15:19	
Naphthalene	<0.0167	0.0333	0.0269	81	0.0269	81	40-135	0	25	mg/kg	10.30.2019 15:19	
Phenanthrene	<0.00167	0.0333	0.0282	85	0.0282	85	44-119	0	25	mg/kg	10.30.2019 15:19	
Pyrene	<0.00167	0.0333	0.0278	83	0.0282	85	50-126	1	25	mg/kg	10.30.2019 15:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	93		91		89		31-130	%	10.30.2019 15:19
2-Fluorobiphenyl	95		96		94		51-133	%	10.30.2019 15:19
Terphenyl-D14	100		97		97		46-137	%	10.30.2019 15:19

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641446

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106011 Matrix: Solid Date Prep: 10.30.2019

MB Sample Id: 7689217-1-BLK LCS Sample Id: 7689217-1-BKS LCSD Sample Id: 7689217-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0236	71	0.0273	82	42-116	15	25	mg/kg	10.30.2019 16:55	
Acenaphthylene	<0.00167	0.0333	0.0232	70	0.0269	81	42-121	15	25	mg/kg	10.30.2019 16:55	
Anthracene	<0.00167	0.0333	0.0263	79	0.0280	84	44-120	6	25	mg/kg	10.30.2019 16:55	
Benzo(a)anthracene	<0.00167	0.0333	0.0283	85	0.0280	84	52-121	1	25	mg/kg	10.30.2019 16:55	
Benzo(a)pyrene	<0.00167	0.0333	0.0295	89	0.0289	87	50-128	2	25	mg/kg	10.30.2019 16:55	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0295	89	0.0291	87	49-137	1	25	mg/kg	10.30.2019 16:55	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0305	92	0.0297	89	47-132	3	25	mg/kg	10.30.2019 16:55	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0298	89	0.0291	87	48-133	2	25	mg/kg	10.30.2019 16:55	
Chrysene	<0.00167	0.0333	0.0280	84	0.0273	82	54-113	3	25	mg/kg	10.30.2019 16:55	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0305	92	0.0297	89	48-133	3	25	mg/kg	10.30.2019 16:55	
Fluoranthene	<0.00167	0.0333	0.0285	86	0.0288	86	54-128	1	25	mg/kg	10.30.2019 16:55	
Fluorene	<0.00167	0.0333	0.0246	74	0.0278	83	44-118	12	25	mg/kg	10.30.2019 16:55	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0307	92	0.0299	90	49-129	3	25	mg/kg	10.30.2019 16:55	
Naphthalene	<0.0167	0.0333	0.0225	68	0.0271	81	40-135	19	25	mg/kg	10.30.2019 16:55	
Phenanthrene	<0.00167	0.0333	0.0265	80	0.0283	85	44-119	7	25	mg/kg	10.30.2019 16:55	
Pyrene	<0.00167	0.0333	0.0276	83	0.0276	83	50-126	0	25	mg/kg	10.30.2019 16:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	65		76		93		31-130	%	10.30.2019 16:55
2-Fluorobiphenyl	68		80		96		51-133	%	10.30.2019 16:55
Terphenyl-D14	90		96		98		46-137	%	10.30.2019 16:55

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106008 Matrix: Soil Date Prep: 10.30.2019

Parent Sample Id: 641446-005 MS Sample Id: 641446-005 S MSD Sample Id: 641446-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0269	81	0.0267	80	42-116	1	25	mg/kg	10.30.2019 18:35	
Acenaphthylene	<0.00167	0.0333	0.0276	83	0.0271	81	42-121	2	25	mg/kg	10.30.2019 18:35	
Anthracene	<0.00167	0.0333	0.0286	86	0.0284	85	44-120	1	25	mg/kg	10.30.2019 18:35	
Benzo(a)anthracene	0.00156	0.0333	0.0297	85	0.0295	84	52-121	1	25	mg/kg	10.30.2019 18:35	
Benzo(a)pyrene	0.00210	0.0333	0.0314	88	0.0314	88	50-128	0	25	mg/kg	10.30.2019 18:35	
Benzo(b)fluoranthene	0.00294	0.0333	0.0337	92	0.0340	93	49-137	1	25	mg/kg	10.30.2019 18:35	
Benzo(g,h,i)perylene	0.00232	0.0333	0.0335	94	0.0334	93	47-132	0	25	mg/kg	10.30.2019 18:35	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0291	87	0.0286	86	48-133	2	25	mg/kg	10.30.2019 18:35	
Chrysene	0.00178	0.0333	0.0291	82	0.0287	81	54-113	1	25	mg/kg	10.30.2019 18:35	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0302	91	0.0301	90	48-133	0	25	mg/kg	10.30.2019 18:35	
Fluoranthene	0.00205	0.0333	0.0340	96	0.0325	91	54-128	5	25	mg/kg	10.30.2019 18:35	
Fluorene	<0.00167	0.0333	0.0278	83	0.0275	83	44-118	1	25	mg/kg	10.30.2019 18:35	
Indeno(1,2,3-c,d)Pyrene	0.00180	0.0333	0.0325	92	0.0323	92	49-129	1	25	mg/kg	10.30.2019 18:35	
Naphthalene	<0.0167	0.0333	0.0260	78	0.0261	78	40-135	0	25	mg/kg	10.30.2019 18:35	
Phenanthrene	<0.00167	0.0333	0.0300	90	0.0294	88	44-119	2	25	mg/kg	10.30.2019 18:35	
Pyrene	0.00275	0.0333	0.0339	94	0.0323	89	50-126	5	25	mg/kg	10.30.2019 18:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	84		89		31-130	%	10.30.2019 18:35
2-Fluorobiphenyl	87		92		51-133	%	10.30.2019 18:35
Terphenyl-D14	96		100		46-137	%	10.30.2019 18:35

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550
Seq Number: 3106011 Matrix: Soil Date Prep: 10.30.2019
Parent Sample Id: 641446-029 MS Sample Id: 641446-029 S MSD Sample Id: 641446-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.0167	0.0333	0.0217	65	0.0249	75	42-116	14	25	mg/kg	10.30.2019 17:45	
Acenaphthylene	<0.0167	0.0333	0.0248	74	0.0355	107	42-121	35	25	mg/kg	10.30.2019 17:45	F
Anthracene	<0.0167	0.0333	0.0288	86	0.0466	140	44-120	47	25	mg/kg	10.30.2019 17:45	XF
Benzo(a)anthracene	0.0225	0.0333	0.0470	74	0.0593	111	52-121	23	25	mg/kg	10.30.2019 17:45	
Benzo(a)pyrene	0.0385	0.0333	0.0625	72	0.0751	110	50-128	18	25	mg/kg	10.30.2019 17:45	
Benzo(b)fluoranthene	0.0501	0.0333	0.0701	60	0.108	174	49-137	43	25	mg/kg	10.30.2019 17:45	XF
Benzo(g,h,i)perylene	0.0521	0.0333	0.0770	75	0.0892	111	47-132	15	25	mg/kg	10.30.2019 17:45	
Benzo(k)fluoranthene	0.0155	0.0333	0.0448	88	0.0635	144	48-133	35	25	mg/kg	10.30.2019 17:45	XF
Chrysene	0.0343	0.0333	0.0535	58	0.121	260	54-113	77	25	mg/kg	10.30.2019 17:45	XF
Dibenz(a,h)Anthracene	<0.0167	0.0333	0.0331	99	0.0357	107	48-133	8	25	mg/kg	10.30.2019 17:45	
Fluoranthene	0.0622	0.0333	0.0809	56	0.191	387	54-128	81	25	mg/kg	10.30.2019 17:45	XF
Fluorene	<0.0167	0.0333	0.0228	68	0.0260	78	44-118	13	25	mg/kg	10.30.2019 17:45	
Indeno(1,2,3-c,d)Pyrene	0.0346	0.0333	0.0602	77	0.0720	112	49-129	18	25	mg/kg	10.30.2019 17:45	
Naphthalene	<0.167	0.0333	0.0188	56	0.0210	63	40-135	11	25	mg/kg	10.30.2019 17:45	
Phenanthrene	0.0182	0.0333	0.0414	70	0.0530	105	44-119	25	25	mg/kg	10.30.2019 17:45	
Pyrene	0.0733	0.0333	0.0906	52	0.186	338	50-126	69	25	mg/kg	10.30.2019 17:45	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	53		62		31-130	%	10.30.2019 17:45
2-Fluorobiphenyl	66		77		51-133	%	10.30.2019 17:45
Terphenyl-D14	90		99		46-137	%	10.30.2019 17:45

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3105931 Matrix: Solid Date Prep: 10.30.2019

MB Sample Id: 7689249-1-BLK LCS Sample Id: 7689249-1-BKS LCSD Sample Id: 7689249-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0504	101	0.0497	99	72-125	1	25	mg/kg	10.30.2019 12:25	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0481	96	0.0485	97	75-125	1	25	mg/kg	10.30.2019 12:25	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0500	100	0.0489	98	74-125	2	25	mg/kg	10.30.2019 12:25	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0475	95	0.0469	94	75-127	1	25	mg/kg	10.30.2019 12:25	
1,1-Dichloroethane	<0.00500	0.0500	0.0463	93	0.0471	94	72-125	2	25	mg/kg	10.30.2019 12:25	
1,1-Dichloroethene	<0.00500	0.0500	0.0498	100	0.0497	99	59-172	0	25	mg/kg	10.30.2019 12:25	
1,1-Dichloropropene	<0.00500	0.0500	0.0487	97	0.0494	99	75-125	1	25	mg/kg	10.30.2019 12:25	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0501	100	0.0492	98	75-137	2	25	mg/kg	10.30.2019 12:25	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0487	97	0.0484	97	75-125	1	25	mg/kg	10.30.2019 12:25	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0513	103	0.0493	99	75-135	4	25	mg/kg	10.30.2019 12:25	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0512	102	0.0493	99	75-125	4	25	mg/kg	10.30.2019 12:25	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0489	98	0.0484	97	59-125	1	25	mg/kg	10.30.2019 12:25	
1,2-Dibromoethane	<0.00500	0.0500	0.0467	93	0.0474	95	73-125	1	25	mg/kg	10.30.2019 12:25	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0495	99	0.0483	97	75-125	2	25	mg/kg	10.30.2019 12:25	
1,2-Dichloroethane	<0.00500	0.0500	0.0452	90	0.0458	92	68-127	1	25	mg/kg	10.30.2019 12:25	
1,2-Dichloropropane	<0.00500	0.0500	0.0469	94	0.0463	93	74-125	1	25	mg/kg	10.30.2019 12:25	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0527	105	0.0509	102	70-130	3	25	mg/kg	10.30.2019 12:25	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0485	97	0.0479	96	75-125	1	25	mg/kg	10.30.2019 12:25	
1,3-Dichloropropane	<0.00500	0.0500	0.0476	95	0.0477	95	75-125	0	25	mg/kg	10.30.2019 12:25	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0481	96	0.0479	96	75-125	0	25	mg/kg	10.30.2019 12:25	
2,2-Dichloropropane	<0.00500	0.0500	0.0496	99	0.0484	97	75-125	2	25	mg/kg	10.30.2019 12:25	
2-Butanone	<0.0200	0.250	0.224	90	0.214	86	75-125	5	25	mg/kg	10.30.2019 12:25	
2-Chlorotoluene	<0.00500	0.0500	0.0504	101	0.0493	99	73-125	2	25	mg/kg	10.30.2019 12:25	
2-Hexanone	<0.0500	0.250	0.233	93	0.217	87	75-125	7	25	mg/kg	10.30.2019 12:25	
4-Chlorotoluene	<0.00500	0.0500	0.0488	98	0.0488	98	74-125	0	25	mg/kg	10.30.2019 12:25	
4-Methyl-2-Pentanone	<0.0500	0.250	0.233	93	0.233	93	60-140	0	25	mg/kg	10.30.2019 12:25	
Acetone	<0.100	0.250	0.228	91	0.200	80	50-150	13	25	mg/kg	10.30.2019 12:25	
Benzene	<0.00100	0.0500	0.0469	94	0.0472	94	66-142	1	25	mg/kg	10.30.2019 12:25	
Bromobenzene	<0.00500	0.0500	0.0484	97	0.0484	97	75-125	0	25	mg/kg	10.30.2019 12:25	
Bromochloromethane	<0.00500	0.0500	0.0454	91	0.0468	94	60-140	3	25	mg/kg	10.30.2019 12:25	
Bromodichloromethane	<0.00500	0.0500	0.0473	95	0.0477	95	75-125	1	25	mg/kg	10.30.2019 12:25	
Bromoform	<0.00500	0.0500	0.0483	97	0.0496	99	75-125	3	25	mg/kg	10.30.2019 12:25	
Bromomethane	<0.00500	0.0500	0.0431	86	0.0436	87	60-140	1	25	mg/kg	10.30.2019 12:25	
Carbon Disulfide	<0.00500	0.0500	0.0497	99	0.0489	98	60-140	2	25	mg/kg	10.30.2019 12:25	
Carbon Tetrachloride	<0.00500	0.0500	0.0517	103	0.0519	104	62-125	0	25	mg/kg	10.30.2019 12:25	
Chlorobenzene	<0.00500	0.0500	0.0478	96	0.0476	95	60-133	0	25	mg/kg	10.30.2019 12:25	
Chloroethane	<0.0100	0.0500	0.0477	95	0.0484	97	60-140	1	25	mg/kg	10.30.2019 12:25	
Chloroform	<0.00500	0.0500	0.0457	91	0.0463	93	74-125	1	25	mg/kg	10.30.2019 12:25	
Chloromethane	<0.00500	0.0500	0.0419	84	0.0444	89	60-140	6	25	mg/kg	10.30.2019 12:25	
cis-1,2-Dichloroethene	<0.00500	0.0500	0.0464	93	0.0467	93	75-125	1	25	mg/kg	10.30.2019 12:25	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0482	96	0.0489	98	74-125	1	25	mg/kg	10.30.2019 12:25	
Dibromochloromethane	<0.00500	0.0500	0.0490	98	0.0497	99	73-125	1	25	mg/kg	10.30.2019 12:25	
Dibromomethane	<0.00500	0.0500	0.0457	91	0.0460	92	69-127	1	25	mg/kg	10.30.2019 12:25	
Dichlorodifluoromethane	<0.00500	0.0500	0.0512	102	0.0492	98	65-135	4	25	mg/kg	10.30.2019 12:25	
Ethylbenzene	<0.00100	0.0500	0.0484	97	0.0481	96	75-125	1	25	mg/kg	10.30.2019 12:25	
Hexachlorobutadiene	<0.00500	0.0500	0.0553	111	0.0522	104	75-125	6	25	mg/kg	10.30.2019 12:25	
Iodomethane (Methyl Iodide)	<0.0200	0.0500	0.0482	96	0.0479	96	75-125	1	25	mg/kg	10.30.2019 12:25	
Isopropylbenzene	<0.00500	0.0500	0.0504	101	0.0498	100	75-125	1	25	mg/kg	10.30.2019 12:25	
m,p-Xylenes	<0.00200	0.100	0.0970	97	0.0957	96	75-125	1	25	mg/kg	10.30.2019 12:25	
Methylene Chloride	<0.0200	0.0500	0.0500	100	0.0503	101	75-125	1	25	mg/kg	10.30.2019 12:25	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641446

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3105931 Matrix: Solid Date Prep: 10.30.2019

MB Sample Id: 7689249-1-BLK LCS Sample Id: 7689249-1-BKS LCSD Sample Id: 7689249-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.00500	0.0500	0.0461	92	0.0481	96	60-140	4	25	mg/kg	10.30.2019 12:25	
Naphthalene	<0.0100	0.0500	0.0500	100	0.0495	99	70-130	1	25	mg/kg	10.30.2019 12:25	
n-Butylbenzene	<0.00500	0.0500	0.0530	106	0.0515	103	75-125	3	25	mg/kg	10.30.2019 12:25	
n-Propylbenzene	<0.00500	0.0500	0.0519	104	0.0506	101	75-125	3	25	mg/kg	10.30.2019 12:25	
o-Xylene	<0.00100	0.0500	0.0480	96	0.0479	96	75-125	0	25	mg/kg	10.30.2019 12:25	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0544	109	0.0521	104	75-125	4	25	mg/kg	10.30.2019 12:25	
Sec-Butylbenzene	<0.00500	0.0500	0.0557	111	0.0531	106	75-125	5	25	mg/kg	10.30.2019 12:25	
Styrene	<0.00500	0.0500	0.0473	95	0.0474	95	75-125	0	25	mg/kg	10.30.2019 12:25	
tert-Butylbenzene	<0.00500	0.0500	0.0564	113	0.0539	108	75-125	5	25	mg/kg	10.30.2019 12:25	
Tetrachloroethylene	<0.00500	0.0500	0.0498	100	0.0499	100	71-125	0	25	mg/kg	10.30.2019 12:25	
Toluene	<0.00500	0.0500	0.0476	95	0.0474	95	59-139	0	25	mg/kg	10.30.2019 12:25	
trans-1,2-dichloroethene	<0.00500	0.0500	0.0469	94	0.0474	95	75-125	1	25	mg/kg	10.30.2019 12:25	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0482	96	0.0486	97	66-125	1	25	mg/kg	10.30.2019 12:25	
Trichloroethene	<0.00500	0.0500	0.0474	95	0.0472	94	62-137	0	25	mg/kg	10.30.2019 12:25	
Trichlorofluoromethane	<0.00500	0.0500	0.0524	105	0.0513	103	67-125	2	25	mg/kg	10.30.2019 12:25	
Vinyl Acetate	<0.0100	0.250	0.243	97	0.247	99	60-140	2	25	mg/kg	10.30.2019 12:25	
Vinyl Chloride	<0.00500	0.0500	0.0465	93	0.0485	97	60-140	4	25	mg/kg	10.30.2019 12:25	
1,3-Butadiene	<0.00500	0.0500	0.0554	111	0.0563	113	70-130	2	25	mg/kg	10.30.2019 12:25	
Cyclohexane	<0.00500	0.0500	0.0526	105	0.0527	105	70-130	0	25	mg/kg	10.30.2019 12:25	
Dicyclopentadiene	<0.00500	0.0500	0.0557	111	0.0538	108	70-120	3	25	mg/kg	10.30.2019 12:25	
Methylcyclohexane	<0.0100	0.0500	0.0535	107	0.0532	106	65-135	1	25	mg/kg	10.30.2019 12:25	
n-Hexane	<0.0100	0.0500	0.0537	107	0.0526	105	72-125	2	25	mg/kg	10.30.2019 12:25	
4-Ethyltoluene	<0.00500	0.0500	0.0524	105	0.0513	103	70-130	2	25	mg/kg	10.30.2019 12:25	
Propene	<0.00500	0.0500	0.0566	113	0.0550	110	70-130	3	25	mg/kg	10.30.2019 12:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	98		98		99		53-142	%	10.30.2019 12:25
1,2-Dichloroethane-D4	99		99		99		56-150	%	10.30.2019 12:25
Toluene-D8	102		101		101		70-130	%	10.30.2019 12:25
4-Bromofluorobenzene	100		99		101		68-152	%	10.30.2019 12:25

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3105931 Matrix: Soil Date Prep: 10.30.2019

Parent Sample Id: 641446-029 MS Sample Id: 641446-029 S MSD Sample Id: 641446-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.324	3.24	2.96	91	2.78	86	72-125	6	25	mg/kg	10.30.2019 13:08	
1,1,1-Trichloroethane	<0.324	3.24	2.96	91	2.93	90	75-125	1	25	mg/kg	10.30.2019 13:08	
1,1,2,2-Tetrachloroethane	<0.324	3.24	3.09	95	2.82	87	74-125	9	25	mg/kg	10.30.2019 13:08	
1,1,2-Trichloroethane	<0.324	3.24	2.99	92	2.81	87	75-127	6	25	mg/kg	10.30.2019 13:08	
1,1-Dichloroethane	<0.324	3.24	2.89	89	2.80	86	72-125	3	25	mg/kg	10.30.2019 13:08	
1,1-Dichloroethene	<0.324	3.24	3.05	94	2.97	92	59-172	3	25	mg/kg	10.30.2019 13:08	
1,1-Dichloropropene	<0.324	3.24	3.05	94	3.03	94	75-125	1	25	mg/kg	10.30.2019 13:08	
1,2,3-Trichlorobenzene	<0.324	3.24	3.14	97	2.89	89	75-137	8	25	mg/kg	10.30.2019 13:08	
1,2,3-Trichloropropane	<0.324	3.24	3.08	95	2.87	89	75-125	7	25	mg/kg	10.30.2019 13:08	
1,2,4-Trichlorobenzene	<0.324	3.24	3.14	97	2.94	91	75-135	7	25	mg/kg	10.30.2019 13:08	
1,2,4-Trimethylbenzene	<0.324	3.24	3.16	98	3.05	94	75-125	4	25	mg/kg	10.30.2019 13:08	
1,2-Dibromo-3-Chloropropane	<0.324	3.24	2.75	85	2.39	74	59-125	14	25	mg/kg	10.30.2019 13:08	
1,2-Dibromoethane	<0.324	3.24	3.01	93	2.81	87	73-125	7	25	mg/kg	10.30.2019 13:08	
1,2-Dichlorobenzene	<0.324	3.24	3.06	94	2.93	90	75-125	4	25	mg/kg	10.30.2019 13:08	
1,2-Dichloroethane	<0.324	3.24	2.86	88	2.71	84	68-127	5	25	mg/kg	10.30.2019 13:08	
1,2-Dichloropropane	<0.324	3.24	2.93	90	2.84	88	74-125	3	25	mg/kg	10.30.2019 13:08	
1,3,5-Trimethylbenzene	<0.324	3.24	3.28	101	3.15	97	70-130	4	25	mg/kg	10.30.2019 13:08	
1,3-Dichlorobenzene	<0.324	3.24	3.07	95	2.96	91	75-125	4	25	mg/kg	10.30.2019 13:08	
1,3-Dichloropropane	<0.324	3.24	3.01	93	2.87	89	75-125	5	25	mg/kg	10.30.2019 13:08	
1,4-Dichlorobenzene	<0.324	3.24	2.98	92	2.93	90	75-125	2	25	mg/kg	10.30.2019 13:08	
2,2-Dichloropropane	<0.324	3.24	2.95	91	2.95	91	75-125	0	25	mg/kg	10.30.2019 13:08	
2-Butanone	<1.30	16.2	15.0	93	13.4	83	75-125	11	25	mg/kg	10.30.2019 13:08	
2-Chlorotoluene	<0.324	3.24	3.16	98	3.04	94	73-125	4	25	mg/kg	10.30.2019 13:08	
2-Hexanone	<3.24	16.2	15.2	94	13.6	84	75-125	11	25	mg/kg	10.30.2019 13:08	
4-Chlorotoluene	<0.324	3.24	3.08	95	2.98	92	74-125	3	25	mg/kg	10.30.2019 13:08	
4-Methyl-2-Pentanone	<3.24	16.2	14.5	90	13.3	82	60-140	9	25	mg/kg	10.30.2019 13:08	
Acetone	<6.48	16.2	15.2	94	13.1	81	50-150	15	25	mg/kg	10.30.2019 13:08	
Benzene	<0.0648	3.24	2.95	91	2.90	90	66-142	2	25	mg/kg	10.30.2019 13:08	
Bromobenzene	<0.324	3.24	3.10	96	2.99	92	75-125	4	25	mg/kg	10.30.2019 13:08	
Bromochloromethane	<0.324	3.24	2.86	88	2.75	85	60-140	4	25	mg/kg	10.30.2019 13:08	
Bromodichloromethane	<0.324	3.24	2.80	86	2.63	81	75-125	6	25	mg/kg	10.30.2019 13:08	
Bromoform	<0.324	3.24	2.66	82	2.38	73	75-125	11	25	mg/kg	10.30.2019 13:08	X
Bromomethane	<0.324	3.24	0.678	21	0.797	25	60-140	16	25	mg/kg	10.30.2019 13:08	X
Carbon Disulfide	<0.324	3.24	2.68	83	2.63	81	60-140	2	25	mg/kg	10.30.2019 13:08	
Carbon Tetrachloride	<0.324	3.24	3.01	93	2.89	89	62-125	4	25	mg/kg	10.30.2019 13:08	
Chlorobenzene	<0.324	3.24	3.03	94	2.90	90	60-133	4	25	mg/kg	10.30.2019 13:08	
Chloroethane	<0.648	3.24	1.12	35	1.06	33	60-140	6	25	mg/kg	10.30.2019 13:08	X
Chloroform	<0.324	3.24	2.86	88	2.77	85	74-125	3	25	mg/kg	10.30.2019 13:08	
Chloromethane	<0.324	3.24	2.73	84	2.63	81	60-140	4	25	mg/kg	10.30.2019 13:08	
cis-1,2-Dichloroethene	<0.324	3.24	2.92	90	2.81	87	75-125	4	25	mg/kg	10.30.2019 13:08	
cis-1,3-Dichloropropene	<0.324	3.24	3.02	93	2.92	90	74-125	3	25	mg/kg	10.30.2019 13:08	
Dibromochloromethane	<0.324	3.24	2.83	87	2.56	79	73-125	10	25	mg/kg	10.30.2019 13:08	
Dibromomethane	<0.324	3.24	2.91	90	2.73	84	69-127	6	25	mg/kg	10.30.2019 13:08	
Dichlorodifluoromethane	<0.324	3.24	3.16	98	3.01	93	65-135	5	25	mg/kg	10.30.2019 13:08	
Ethylbenzene	<0.0648	3.24	3.03	94	2.96	91	75-125	2	25	mg/kg	10.30.2019 13:08	
Hexachlorobutadiene	<0.324	3.24	3.34	103	3.24	100	75-125	3	25	mg/kg	10.30.2019 13:08	
Iodomethane (Methyl Iodide)	<1.30	3.24	2.94	91	2.81	87	75-125	5	25	mg/kg	10.30.2019 13:08	
Isopropylbenzene	<0.324	3.24	3.13	97	3.09	95	75-125	1	25	mg/kg	10.30.2019 13:08	
m,p-Xylenes	<0.130	6.48	6.07	94	5.93	92	75-125	2	25	mg/kg	10.30.2019 13:08	
Methylene Chloride	<0.273	3.24	3.27	101	3.18	98	75-125	3	25	mg/kg	10.30.2019 13:08	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3105931 Matrix: Soil Date Prep: 10.30.2019

Parent Sample Id: 641446-029 MS Sample Id: 641446-029 S MSD Sample Id: 641446-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.324	3.24	2.94	91	2.79	86	60-140	5	25	mg/kg	10.30.2019 13:08	
Naphthalene	<0.648	3.24	3.16	98	2.84	88	70-130	11	25	mg/kg	10.30.2019 13:08	
n-Butylbenzene	<0.324	3.24	3.27	101	3.21	99	75-125	2	25	mg/kg	10.30.2019 13:08	
n-Propylbenzene	<0.324	3.24	3.25	100	3.12	96	75-125	4	25	mg/kg	10.30.2019 13:08	
o-Xylene	<0.0648	3.24	3.01	93	2.91	90	75-125	3	25	mg/kg	10.30.2019 13:08	
p-Cymene (p-Isopropyltoluene)	<0.324	3.24	3.39	105	3.26	101	75-125	4	25	mg/kg	10.30.2019 13:08	
Sec-Butylbenzene	<0.324	3.24	3.44	106	3.33	103	75-125	3	25	mg/kg	10.30.2019 13:08	
Styrene	<0.324	3.24	3.00	93	2.90	90	75-125	3	25	mg/kg	10.30.2019 13:08	
tert-Butylbenzene	<0.324	3.24	3.47	107	3.34	103	75-125	4	25	mg/kg	10.30.2019 13:08	
Tetrachloroethylene	<0.324	3.24	3.17	98	3.07	95	71-125	3	25	mg/kg	10.30.2019 13:08	
Toluene	<0.324	3.24	3.01	93	2.92	90	59-139	3	25	mg/kg	10.30.2019 13:08	
trans-1,2-dichloroethene	<0.324	3.24	2.93	90	2.84	88	75-125	3	25	mg/kg	10.30.2019 13:08	
trans-1,3-dichloropropene	<0.324	3.24	3.05	94	2.86	88	66-125	6	25	mg/kg	10.30.2019 13:08	
Trichloroethene	<0.324	3.24	3.00	93	2.97	92	62-137	1	25	mg/kg	10.30.2019 13:08	
Trichlorofluoromethane	<0.324	3.24	2.92	90	2.84	88	67-125	3	25	mg/kg	10.30.2019 13:08	
Vinyl Acetate	<0.648	16.2	15.2	94	14.3	88	60-140	6	25	mg/kg	10.30.2019 13:08	
Vinyl Chloride	<0.324	3.24	2.89	89	2.84	88	60-140	2	25	mg/kg	10.30.2019 13:08	
1,3-Butadiene	<0.324	3.24	3.46	107	3.44	106	70-130	1	25	mg/kg	10.30.2019 13:08	
Cyclohexane	<0.324	3.24	3.27	101	3.26	101	70-130	0	25	mg/kg	10.30.2019 13:08	
Dicyclopentadiene	<0.324	3.24	3.42	106	3.28	101	70-120	4	25	mg/kg	10.30.2019 13:08	
Methylcyclohexane	<0.648	3.24	3.38	104	3.32	102	65-135	2	25	mg/kg	10.30.2019 13:08	
n-Hexane	0.144	3.24	3.37	100	3.31	98	72-125	2	25	mg/kg	10.30.2019 13:08	
4-Ethyltoluene	<0.324	3.24	3.29	102	3.17	98	70-130	4	25	mg/kg	10.30.2019 13:08	
Propene	<0.324	3.24	3.42	106	3.30	102	70-130	4	25	mg/kg	10.30.2019 13:08	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	97		97		53-142	%	10.30.2019 13:08
1,2-Dichloroethane-D4	102		98		56-150	%	10.30.2019 13:08
Toluene-D8	101		99		70-130	%	10.30.2019 13:08
4-Bromofluorobenzene	103		99		68-152	%	10.30.2019 13:08

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Chain of Custody

Work Order No: 641446

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:	Judith.Heywood@aps.com	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	~~Routine~~ [X]	
P.O. Number:	700735632	Rush: 48 HR	
Sampler's Name:	MATT BRANCHE	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	IR ID:HOU-068 Temp: 1.1 C/F:+0.2 Corrected: 1.3			
Received Intact:	(Yes) No			
Cooler Custody Seals:	(Yes) No N/A			
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B31-0-102719	S	10-27-19	1045	0	1	X	X							
D-B32-0-102719	S	10-27-19	1100	0	1	X	X							
D-B33-0-102719	S	10-27-19	1122	0	1	X	X							
D-B34-0-102719	S	10-27-19	1134	0	1	X	X							
D-B27-0-102719	S	10-27-19	1246	0	1	X	X							
D-B29-0-102719	S	10-27-19	1250	0	1	X	X							
D-B35-0-102719	S	10-27-19	1309	0	1	X	X							
D-B18-0-102719	S	10-27-19	1330	0	1	X	X							
D-B20-0-102719	S	10-27-19	1352	0	1	X	X							
D-FD01-102719	S	10-27-19	1400	0	1	X	X							

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
MATT BRANCHE	FedEx	10-29-19:1400	2 FedEx		10/30/19/1000
3			4		
5			6		

Chain of Custody

Work Order No: 641446

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 2 of 4

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	~~Routine~~ [X]	
P.O. Number:	700735632	Rush: 48Hr	
Sampler's Name:	MATT BRANCHE	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: 1.1	Corrected: 1.3	
Sample Custody Seals:	Yes No (N/A)			

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide							Sample Comments
D-B28-0-102719	S	10-27-19	1458	0	1	X	X													
D-B22-0-102719	S	10-27-19	1506	0	1	X	X													
D-B19-0-102719	S	10-27-19	1536	0	1	X	X													
D-B25-0-102719	S	10-27-19	1550	0	4	X	X	X	X	X	X	X	X							
D-B21-0-102719	S	10-27-19	1626	0	1	X	X													
D-B23-0-102719	S	10-27-19	1646	0	1	X	X													
D-B16-0-102719	S	10-27-19	1712	0	1	X	X													
D-B17-0-102719	S	10-27-19	1738	0	1	X	X													
TB01-102719	W	—	—	—	1			X												
D-B26-102819	S	10-28-19	1015	0	1	X	X													

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U 1631 / 245.1 / 7470 / 7471 : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx	10-29-19 1400	2 FedEx		10/30/19 1000
3			4		
5			6		

Chain of Custody

Work Order No: 641446

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page 3 of 4

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RR ☐ Superfur ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	~~Routine~~ [X]	
P.O. Number:	700735632	Rush: 48hr	
Sampler's Name:	A.Shwartz, M.Branche	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: 1.1	Corrected: 1.3	
Sample Custody Seals:	Yes No (N/A)			

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B24-0-102819	S	10-28-19	1032	0	1	X	X							
D-B30-0-102819	S	10-28-19	1112	0	1	X	X							
D-B34-5.0-5.5-102819	S	10-28-19	1105	5-5.5	1	X	X							
D-FD01-102819	S	10-28-19	1115	—	1	X	X							
D-B33-5.0-5.5'	S	10-28-19	1150	5.0-5.5	1	X	X							
D-B32-5.0-5.5'	S		1355	5.0-5.5	1	X	X							
D-BD02-102819	S		1405	5.0-5.5	1	X	X							
D-B31-5.0-5.5	S		1425	5.0-5.5	1	X	X							
D-B35-5.0-5.5'	S		1640	5.0-5.5	3	X	X	X	X	X	X	X	X	MS/MSD
D-B18-20-2.5'	S	↓	1710	20-2.5'	1	X	X							

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx	10-29-19:1400	2 FedEx		10/30/19 1000
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 414416

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:	Judith.Heywood@aps.com	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	~~Routine~~ [X]	
P.O. Number:	700735632	Rush: X -48hr	
Sampler's Name:	A Shwartz / M Branche	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: 1.1	Corrected: 1.3	
Sample Custody Seals:	Yes No (N/A)			

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B18-5.0-5.5'	S	10-28-19	1715	5.0-5.5	1	X	X							
D-FD03-102819	S	10-28-19	1720	—	1	X	X							
D-B18-7.0-7.5'	S	10-28-19	1730	7.0-7.5	1	X	X							
D-B14-1.0-1.5'	S	10-29-19	0815	1.0-1.5	4	X	X	X	X	X	X	X	X	4 bottles
D-B14-2.5-3.0'	S	10-29-19	0820	2.5-3.0	1	X	X							
D-B14-5.0-5.5'	S	10-29-19	0915	5.0-5.5	1	X	X							
D-B16-2.5-3.0	S	10-29-19	0950	2.5-3.0	4	X	X	X	X	X	X	X	X	
D-FD01-102919	S	10-29-19	1000	—	4	X	X	X	X	X	X	X	X	
D-B16-5.0-5.5	S	10-29-19	1005	5.0-5.5	3	X	X	X						
D-B22-2.5-3.0	S	10-29-19	1015	2.5-3.0	1	X	X							

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	FedEx	10-29-19 1400	2 FedEx		10/30/19 10:00
3			4		
5			6		

FedEx Tracking Number
8125 9253 6391
Phone
Dept./Floor/Suite/Room

DY SEAL
URE

FedEx.
TRK#
0200
8125 9253 6336
XH SGRA
Y SEAL

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 10/30/2019 10:00:00 AM

Work Order #: 641446

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.3
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: MDS

PH Device/Lot#:

Checklist completed by: Monica Shakhshir Date: 10/30/2019

Checklist reviewed by: Ruriko Konuma Date: 10/30/2019

Analytical Report 641801

for

APS

Project Manager: Judy Heywood

APS MPG Douglas, AZ

D3118600.A.CS>EV.DG.05-1B

11.21.2019

Collected By: Client

4147 Greenbriar Dr.
Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

11.21.2019

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: XENCO Report No(s): **641801**
APS MPG Douglas, AZ
Project Address: Miami, AZ

Judy Heywood:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 641801. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 641801 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ruriko Konuma
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

CASE NARRATIVE

Client Name: APS

Project Name: APS MPG Douglas, AZ

Project ID: *D3118600.A.CS>EV.DG.(*
Work Order Number(s): *641801*

Report Date: *11.21.2019*
Date Received: *11.01.2019*

Sample receipt non conformances and comments:

Revised report due to TCLP Metals Analysis added to sample ID: D-B11-2.5-3.0 sample Work Order number 641801-022 Analysis requested by Matthew Branche via email on 11/17/2019 @ 12:02pm

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106302 PAHs by 8270D SIM

Phenanthrene Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 641801-023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038, -040, -041

Lab Sample ID 641801-026 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Fluoranthene recovered below QC limits in the Matrix Spike. Benzo(a)anthracene , Benzo(a)pyrene , Benzo(b)fluoranthene , Benzo(g,h,i)perylene , Chrysene, Indeno(1,2,3-c,d)Pyrene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Phenanthrene recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641801-023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038, -040, -041.
The Laboratory Control Sample for Chrysene, Pyrene, Benzo(a)pyrene , Benzo(b)fluoranthene , Fluoranthene, Benzo(a)anthracene , Indeno(1,2,3-c,d)Pyrene , Benzo(g,h,i)perylene , Phenanthrene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106405 Total Metals by SW6020A

Lab Sample ID 641801-026 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Arsenic, Barium, Chromium, Lead recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641801-026, -030, -031, -032, -033, -034, -035, -036, -037, -038, -040, -041, -042, -043.
The Laboratory Control Sample for Arsenic, Chromium, Barium, Lead is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106408 Metals, RCRA List, by SW 6020

Lab Sample ID 641801-018 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Barium recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641801-007, -008, -009, -010, -011, -012, -013, -016, -017, -018, -019, -020, -021, -022, -023, -024, -025, -027, -028, -029.
The Laboratory Control Sample for Barium is within laboratory Control Limits, therefore the data was accepted.

CASE NARRATIVE

Client Name: APS

Project Name: APS MPG Douglas, AZ

Project ID: *D3118600.A.CS>EV.DG.(*
Work Order Number(s): *641801*

Report Date: *11.21.2019*
Date Received: *11.01.2019*

Batch: LBA-3106445 PCBs by SW 8082A
Surrogate Decachlorobiphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 641882-004 S,641801-021.

Flagging Criteria

Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Sample Cross Reference 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-B16-7.5-8.0	S	10.29.2019 10:40	7.5 - 8.0	641801-001
D-B16-10.0-10.5	S	10.29.2019 10:50	10.0 - 10.5	641801-002
D-B16-15.0-15.5	S	10.29.2019 12:00	15.0 - 15.5	641801-003
D-FD02-102919	S	10.29.2019 12:15		641801-004
D-B16-19.5-20.0	S	10.29.2019 12:20	19.5 - 20.0	641801-005
D-B28-5.0-5.5	S	10.29.2019 12:45	5.0 - 5.5	641801-006
D-FD03-102919	S	10.29.2019 12:55		641801-007
D-B14-7.5-8.0	S	10.29.2019 13:10	7.5 - 8.0	641801-008
D-B14-10.0-10.5	S	10.29.2019 13:15	10.0 - 10.5	641801-009
D-B14-15.0-15.5	S	10.29.2019 13:45	15.0 - 15.5	641801-010
D-B14-19.5-20.0	S	10.29.2019 13:55	19.5 - 20.0	641801-011
D-B22-5.0-5.5	S	10.29.2019 14:35	5.0 - 5.5	641801-012
D-B22-7.5-8.0	S	10.29.2019 14:50	7.5 - 8.0	641801-013
D-B22-15.0-15.5	S	10.29.2019 15:10	15.0 - 15.5	641801-016
D-B28-10.0-10.5	S	10.29.2019 15:55	10.0 - 10.5	641801-017
D-B28-15.0-15.5	S	10.29.2019 16:15	15.0 - 15.5	641801-018
D-B28-19.5-20.0	S	10.29.2019 16:25	19.5 - 20.0	641801-019
D-B22-10.0-10.5	S	10.29.2019 14:55	10.0 - 10.5	641801-020
D-B11-1.0-1.5	S	10.30.2019 09:15	1.0 - 1.5	641801-021
D-B11-2.5-3.0	S	10.30.2019 09:30	2.5 - 3.0	641801-022
D-B11-5.0-5.5	S	10.30.2019 09:45	5.0 - 5.5	641801-023
D-B11-7.5-8.0	S	10.30.2019 09:50	7.5 - 8.0	641801-024
D-B11-10.0-10.5	S	10.30.2019 09:55	10.0 - 10.5	641801-025
D-B20-2.5-3.0	S	10.30.2019 10:00	2.5 - 3.0	641801-026
D-B11-15.0-15.5	S	10.30.2019 10:05	15.0 - 15.5	641801-027
D-B11-19.5-20.0	S	10.30.2019 10:20	19.5 - 20.0	641801-028
D-B20-5.0-5.5	S	10.30.2019 10:35	5.0 - 5.5	641801-029
D-B17-2.5-3.0	S	10.30.2019 10:50	2.5 - 3.0	641801-030
D-B17-5.0-5.5	S	10.30.2019 10:55	5.0 - 5.5	641801-031
D-B17-7.5-8.0	S	10.30.2019 11:40	7.5 - 8.0	641801-032
D-B17-10.0-10.5	S	10.30.2019 11:45	10.0 - 10.5	641801-033
D-B17-15.0-15.5	S	10.30.2019 11:55	15.0 - 15.5	641801-034
D-B17-19.5-20.0	S	10.30.2019 12:00	19.5 - 20.0	641801-035
D-B24-2.5-3.0	S	10.30.2019 14:50	2.5 - 3.0	641801-036
D-B24-5.0-5.5	S	10.30.2019 15:00	5.0 - 5.5	641801-037
D-B24-7.5-8.0	S	10.30.2019 15:10	7.5 - 8.0	641801-038
D-B24-15.0-15.5	S	10.30.2019 15:50	15.0 - 15.5	641801-040
D-B25-2.5-3.0	S	10.30.2019 16:20	2.5 - 3.0	641801-041
D-B25-5.0-5.5	S	10.30.2019 16:30	5.0 - 5.5	641801-042
D-B25-7.5-8.0	S	10.30.2019 16:55	7.5 - 8.0	641801-043
D-B28-10.0-10.5	S	10.29.2019 15:55	10.0 - 10.5	Not Analyzed
Trip Blank	W	10.30.2019 00:00		Not Analyzed
D-B24-10.0-10.5	S	10.30.2019 15:40	10.0 - 10.5	Not Analyzed

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-7.5-8.0**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-001
Date Collected: 10.29.2019 10:40
Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 10:05
Basis: Dry Weight
Seq Number: 3106373
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0277**	0.0200	mg/kg	11.04.2019 14:04		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.04.2019 09:50
Basis: Dry Weight
Seq Number: 3106337
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.4**	1.85	mg/kg	11.04.2019 13:31		10
Barium	7440-39-3	**123**	3.70	mg/kg	11.04.2019 13:31		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.04.2019 13:31	U	10
Chromium	7440-47-3	**19.9**	3.70	mg/kg	11.04.2019 13:31		10
Lead	7439-92-1	**28.7**	1.85	mg/kg	11.04.2019 13:31		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.04.2019 13:31	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.04.2019 13:31	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-7.5-8.0**
Lab Sample Id: 641801-001

Matrix: Soil
Date Collected: 10.29.2019 10:40

Date Received:11.01.2019 09:30
Sample Depth: 7.5 - 8.0

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106384

Date Prep: 11.04.2019 07:09

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	11.04.2019 18:18	U	10
Acenaphthylene	208-96-8	**0.390**	0.0167	mg/kg	11.04.2019 18:18		10
Anthracene	120-12-7	**0.257**	0.0167	mg/kg	11.04.2019 18:18		10
Benzo(a)anthracene	56-55-3	**0.830**	0.0167	mg/kg	11.04.2019 18:18		10
Benzo(a)pyrene	50-32-8	**1.31**	0.0167	mg/kg	11.04.2019 18:18		10
Benzo(b)fluoranthene	205-99-2	**1.41**	0.0167	mg/kg	11.04.2019 18:18		10
Benzo(g,h,i)perylene	191-24-2	**1.39**	0.0167	mg/kg	11.04.2019 18:18		10
Benzo(k)fluoranthene	207-08-9	**0.363**	0.0167	mg/kg	11.04.2019 18:18		10
Chrysene	218-01-9	**0.975**	0.0167	mg/kg	11.04.2019 18:18		10
Dibenz(a,h)Anthracene	53-70-3	**0.171**	0.0167	mg/kg	11.04.2019 18:18		10
Fluoranthene	206-44-0	**2.54**	0.0167	mg/kg	11.04.2019 18:18		10
Fluorene	86-73-7	**0.102**	0.0167	mg/kg	11.04.2019 18:18		10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.944**	0.0167	mg/kg	11.04.2019 18:18		10
Naphthalene	91-20-3	**0.321**	0.167	mg/kg	11.04.2019 18:18		10
Phenanthrene	85-01-8	**1.67**	0.0167	mg/kg	11.04.2019 18:18		10
Pyrene	129-00-0	**3.16**	0.0167	mg/kg	11.04.2019 18:18		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	101	%	31-130	11.04.2019 18:18	
2-Fluorobiphenyl	96	%	51-133	11.04.2019 18:18	
Terphenyl-D14	112	%	46-137	11.04.2019 18:18	

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Sample Id: **D-B16-7.5-8.0**
Lab Sample Id: 641801-001

Matrix: Soil
Date Collected: 10.29.2019 10:40

Date Received:11.01.2019 09:30
Sample Depth: 7.5 - 8.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,1-Dichloroethane	75-34-3	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,1-Dichloroethene	75-35-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,1-Dichloropropene	563-58-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2-Dibromoethane	106-93-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2-Dichloroethane	107-06-2	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,2-Dichloropropane	78-87-5	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,3-Dichloropropane	142-28-9	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
2,2-Dichloropropane	594-20-7	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
2-Butanone	78-93-3	BRL	1.17	mg/kg	11.01.2019 15:35	U	50
2-Chlorotoluene	95-49-8	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
2-Hexanone	591-78-6	BRL	2.91	mg/kg	11.01.2019 15:35	U	50
4-Chlorotoluene	106-43-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.91	mg/kg	11.01.2019 15:35	U	50
Acetone	67-64-1	BRL	5.83	mg/kg	11.01.2019 15:35	U	50
Benzene	71-43-2	BRL	0.0583	mg/kg	11.01.2019 15:35	U	50
Bromobenzene	108-86-1	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Bromochloromethane	74-97-5	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Bromodichloromethane	75-27-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Bromoform	75-25-2	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Bromomethane	74-83-9	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Carbon Disulfide	75-15-0	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Carbon Tetrachloride	56-23-5	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Chlorobenzene	108-90-7	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Chloroethane	75-00-3	BRL	0.583	mg/kg	11.01.2019 15:35	U	50
Chloroform	67-66-3	BRL	0.291	mg/kg	11.01.2019 15:35	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B16-7.5-8.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-001	Date Collected:	10.29.2019 10:40	Sample Depth:	7.5 - 8.0
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Dibromochloromethane	124-48-1	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Dibromomethane	74-95-3	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Ethylbenzene	100-41-4	BRL	0.0583	mg/kg	11.01.2019 15:35	U	50
Hexachlorobutadiene	87-68-3	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.17	mg/kg	11.01.2019 15:35	U	50
Isopropylbenzene	98-82-8	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
m,p-Xylenes	179601-23-1	BRL	0.117	mg/kg	11.01.2019 15:35	U	50
Methylene Chloride	75-09-2	BRL	1.17	mg/kg	11.01.2019 15:35	U	50
MTBE	1634-04-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Naphthalene	91-20-3	BRL	0.583	mg/kg	11.01.2019 15:35	U	50
n-Butylbenzene	104-51-8	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
n-Propylbenzene	103-65-1	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
o-Xylene	95-47-6	BRL	0.0583	mg/kg	11.01.2019 15:35	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Sec-Butylbenzene	135-98-8	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Styrene	100-42-5	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
tert-Butylbenzene	98-06-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Tetrachloroethylene	127-18-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Toluene	108-88-3	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Total Xylenes	1330-20-7	BRL	0.0583	mg/kg	11.01.2019 15:35	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Trichloroethene	79-01-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Trichlorofluoromethane	75-69-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Vinyl Acetate	108-05-4	BRL	0.583	mg/kg	11.01.2019 15:35	U	50
Vinyl Chloride	75-01-4	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
1,3-Butadiene	106-99-0	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Cyclohexane	110-82-7	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Dicyclopentadiene	77-73-6	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Methylcyclohexane	108-87-2	BRL	0.583	mg/kg	11.01.2019 15:35	U	50
n-Hexane	110-54-3	BRL	0.583	mg/kg	11.01.2019 15:35	U	50
4-Ethyltoluene	622-96-8	BRL	0.291	mg/kg	11.01.2019 15:35	U	50
Propene	115-07-1	BRL	0.291	mg/kg	11.01.2019 15:35	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-7.5-8.0**
Lab Sample Id: 641801-001

Matrix: Soil
Date Collected: 10.29.2019 10:40

Date Received:11.01.2019 09:30
Sample Depth: 7.5 - 8.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	96	%	53-142	11.01.2019 15:35	
1,2-Dichloroethane-D4	102	%	56-150	11.01.2019 15:35	
Toluene-D8	105	%	70-130	11.01.2019 15:35	
4-Bromofluorobenzene	97	%	68-152	11.01.2019 15:35	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B16-10.0-10.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-002	Date Collected:	10.29.2019 10:50	Sample Depth:	10.0 - 10.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 10:05	Basis:	Dry Weight
Seq Number:	3106373			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0179	mg/kg	11.04.2019 13:44	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	0
Analyst:	DEP	Date Prep:	11.04.2019 09:50	Basis:	Dry Weight
Seq Number:	3106337			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.1**	1.92	mg/kg	11.04.2019 13:34		10
Barium	7440-39-3	**203**	3.85	mg/kg	11.04.2019 13:34		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.04.2019 13:34	U	10
Chromium	7440-47-3	**37.0**	3.85	mg/kg	11.04.2019 13:34		10
Lead	7439-92-1	**14.7**	1.92	mg/kg	11.04.2019 13:34		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.04.2019 13:34	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.04.2019 13:34	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B16-10.0-10.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-002	Date Collected:	10.29.2019 10:50	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:12	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00831	mg/kg	11.04.2019 18:35	U	5
Acenaphthylene	208-96-8	**0.0573**	0.00831	mg/kg	11.04.2019 18:35		5
Anthracene	120-12-7	**0.0388**	0.00831	mg/kg	11.04.2019 18:35		5
Benzo(a)anthracene	56-55-3	**0.103**	0.00831	mg/kg	11.04.2019 18:35		5
Benzo(a)pyrene	50-32-8	**0.169**	0.00831	mg/kg	11.04.2019 18:35		5
Benzo(b)fluoranthene	205-99-2	**0.184**	0.00831	mg/kg	11.04.2019 18:35		5
Benzo(g,h,i)perylene	191-24-2	**0.189**	0.00831	mg/kg	11.04.2019 18:35		5
Benzo(k)fluoranthene	207-08-9	**0.0487**	0.00831	mg/kg	11.04.2019 18:35		5
Chrysene	218-01-9	**0.116**	0.00831	mg/kg	11.04.2019 18:35		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00831	mg/kg	11.04.2019 18:35	U	5
Fluoranthene	206-44-0	**0.344**	0.00831	mg/kg	11.04.2019 18:35		5
Fluorene	86-73-7	**0.0190**	0.00831	mg/kg	11.04.2019 18:35		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.126**	0.00831	mg/kg	11.04.2019 18:35		5
Naphthalene	91-20-3	BRL	0.0831	mg/kg	11.04.2019 18:35	U	5
Phenanthrene	85-01-8	**0.303**	0.00831	mg/kg	11.04.2019 18:35		5
Pyrene	129-00-0	**0.418**	0.00831	mg/kg	11.04.2019 18:35		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	94	%	31-130	11.04.2019 18:35	
2-Fluorobiphenyl	97	%	51-133	11.04.2019 18:35	
Terphenyl-D14	106	%	46-137	11.04.2019 18:35	

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-10.0-10.5**
Lab Sample Id: 641801-002

Matrix: Soil
Date Collected: 10.29.2019 10:50

Date Received:11.01.2019 09:30
Sample Depth: 10.0 - 10.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,1-Dichloroethane	75-34-3	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,1-Dichloroethene	75-35-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,1-Dichloropropene	563-58-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2-Dibromoethane	106-93-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2-Dichloroethane	107-06-2	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,2-Dichloropropane	78-87-5	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,3-Dichloropropane	142-28-9	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
2,2-Dichloropropane	594-20-7	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
2-Butanone	78-93-3	BRL	1.18	mg/kg	11.01.2019 15:56	U	50
2-Chlorotoluene	95-49-8	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
2-Hexanone	591-78-6	BRL	2.96	mg/kg	11.01.2019 15:56	U	50
4-Chlorotoluene	106-43-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.96	mg/kg	11.01.2019 15:56	U	50
Acetone	67-64-1	BRL	5.92	mg/kg	11.01.2019 15:56	U	50
Benzene	71-43-2	BRL	0.0592	mg/kg	11.01.2019 15:56	U	50
Bromobenzene	108-86-1	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Bromochloromethane	74-97-5	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Bromodichloromethane	75-27-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Bromoform	75-25-2	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Bromomethane	74-83-9	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Carbon Disulfide	75-15-0	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Carbon Tetrachloride	56-23-5	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Chlorobenzene	108-90-7	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Chloroethane	75-00-3	BRL	0.592	mg/kg	11.01.2019 15:56	U	50
Chloroform	67-66-3	BRL	0.296	mg/kg	11.01.2019 15:56	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B16-10.0-10.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-002	Date Collected:	10.29.2019 10:50	Sample Depth:	10.0 - 10.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Dibromochloromethane	124-48-1	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Dibromomethane	74-95-3	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Ethylbenzene	100-41-4	BRL	0.0592	mg/kg	11.01.2019 15:56	U	50
Hexachlorobutadiene	87-68-3	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.18	mg/kg	11.01.2019 15:56	U	50
Isopropylbenzene	98-82-8	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
m,p-Xylenes	179601-23-1	BRL	0.118	mg/kg	11.01.2019 15:56	U	50
Methylene Chloride	75-09-2	BRL	1.18	mg/kg	11.01.2019 15:56	U	50
MTBE	1634-04-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Naphthalene	91-20-3	BRL	0.592	mg/kg	11.01.2019 15:56	U	50
n-Butylbenzene	104-51-8	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
n-Propylbenzene	103-65-1	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
o-Xylene	95-47-6	BRL	0.0592	mg/kg	11.01.2019 15:56	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Sec-Butylbenzene	135-98-8	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Styrene	100-42-5	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
tert-Butylbenzene	98-06-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Tetrachloroethylene	127-18-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Toluene	108-88-3	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Total Xylenes	1330-20-7	BRL	0.0592	mg/kg	11.01.2019 15:56	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Trichloroethene	79-01-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Trichlorofluoromethane	75-69-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Vinyl Acetate	108-05-4	BRL	0.592	mg/kg	11.01.2019 15:56	U	50
Vinyl Chloride	75-01-4	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
1,3-Butadiene	106-99-0	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Cyclohexane	110-82-7	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Dicyclopentadiene	77-73-6	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Methylcyclohexane	108-87-2	BRL	0.592	mg/kg	11.01.2019 15:56	U	50
n-Hexane	110-54-3	BRL	0.592	mg/kg	11.01.2019 15:56	U	50
4-Ethyltoluene	622-96-8	BRL	0.296	mg/kg	11.01.2019 15:56	U	50
Propene	115-07-1	BRL	0.296	mg/kg	11.01.2019 15:56	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-10.0-10.5**
Lab Sample Id: 641801-002

Matrix: Soil
Date Collected: 10.29.2019 10:50

Date Received:11.01.2019 09:30
Sample Depth: 10.0 - 10.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	94	%	53-142	11.01.2019 15:56	
1,2-Dichloroethane-D4	99	%	56-150	11.01.2019 15:56	
Toluene-D8	103	%	70-130	11.01.2019 15:56	
4-Bromofluorobenzene	98	%	68-152	11.01.2019 15:56	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B16-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-003	Date Collected:	10.29.2019 12:00	Sample Depth:	15.0 - 15.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 10:05	Basis:	Dry Weight
Seq Number:	3106373			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	11.04.2019 13:49	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	0
Analyst:	DEP	Date Prep:	11.04.2019 09:50	Basis:	Dry Weight
Seq Number:	3106337			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**23.0**	1.96	mg/kg	11.04.2019 13:43		10
Barium	7440-39-3	**284**	3.92	mg/kg	11.04.2019 13:43		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.04.2019 13:43	U	10
Chromium	7440-47-3	**129**	3.92	mg/kg	11.04.2019 13:43		10
Lead	7439-92-1	**15.4**	1.96	mg/kg	11.04.2019 13:43		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.04.2019 13:43	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.04.2019 13:43	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

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Sample Id:	**D-B16-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-003	Date Collected:	10.29.2019 12:00	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:15	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 20:14	U	1
Acenaphthylene	208-96-8	**0.0368**	0.00167	mg/kg	11.04.2019 20:14		1
Anthracene	120-12-7	**0.0245**	0.00167	mg/kg	11.04.2019 20:14		1
Benzo(a)anthracene	56-55-3	**0.0722**	0.00167	mg/kg	11.04.2019 20:14		1
Benzo(a)pyrene	50-32-8	**0.130**	0.00167	mg/kg	11.04.2019 20:14		1
Benzo(b)fluoranthene	205-99-2	**0.136**	0.00167	mg/kg	11.04.2019 20:14		1
Benzo(g,h,i)perylene	191-24-2	**0.113**	0.00167	mg/kg	11.04.2019 20:14		1
Benzo(k)fluoranthene	207-08-9	**0.0417**	0.00167	mg/kg	11.04.2019 20:14		1
Chrysene	218-01-9	**0.0877**	0.00167	mg/kg	11.04.2019 20:14		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 20:14	U	1
Fluoranthene	206-44-0	**0.221**	0.00167	mg/kg	11.04.2019 20:14		1
Fluorene	86-73-7	**0.00932**	0.00167	mg/kg	11.04.2019 20:14		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0802**	0.00167	mg/kg	11.04.2019 20:14		1
Naphthalene	91-20-3	**0.0279**	0.0167	mg/kg	11.04.2019 20:14		1
Phenanthrene	85-01-8	**0.152**	0.00167	mg/kg	11.04.2019 20:14		1
Pyrene	129-00-0	**0.281**	0.00167	mg/kg	11.04.2019 20:14		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	93	%	31-130	11.04.2019 20:14	
2-Fluorobiphenyl	95	%	51-133	11.04.2019 20:14	
Terphenyl-D14	110	%	46-137	11.04.2019 20:14	

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Sample Id: **D-B16-15.0-15.5**
Lab Sample Id: 641801-003

Matrix: Soil
Date Collected: 10.29.2019 12:00

Date Received:11.01.2019 09:30
Sample Depth: 15.0 - 15.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,1-Dichloroethane	75-34-3	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,1-Dichloroethene	75-35-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,1-Dichloropropene	563-58-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2-Dibromoethane	106-93-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2-Dichloroethane	107-06-2	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,2-Dichloropropane	78-87-5	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,3-Dichloropropane	142-28-9	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
2,2-Dichloropropane	594-20-7	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
2-Butanone	78-93-3	BRL	1.07	mg/kg	11.01.2019 16:18	U	50
2-Chlorotoluene	95-49-8	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
2-Hexanone	591-78-6	BRL	2.67	mg/kg	11.01.2019 16:18	U	50
4-Chlorotoluene	106-43-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.67	mg/kg	11.01.2019 16:18	U	50
Acetone	67-64-1	BRL	5.34	mg/kg	11.01.2019 16:18	U	50
Benzene	71-43-2	BRL	0.0534	mg/kg	11.01.2019 16:18	U	50
Bromobenzene	108-86-1	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Bromochloromethane	74-97-5	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Bromodichloromethane	75-27-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Bromoform	75-25-2	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Bromomethane	74-83-9	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Carbon Disulfide	75-15-0	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Carbon Tetrachloride	56-23-5	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Chlorobenzene	108-90-7	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Chloroethane	75-00-3	BRL	0.534	mg/kg	11.01.2019 16:18	U	50
Chloroform	67-66-3	BRL	0.267	mg/kg	11.01.2019 16:18	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B16-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-003	Date Collected:	10.29.2019 12:00	Sample Depth:	15.0 - 15.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Dibromochloromethane	124-48-1	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Dibromomethane	74-95-3	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Ethylbenzene	100-41-4	BRL	0.0534	mg/kg	11.01.2019 16:18	U	50
Hexachlorobutadiene	87-68-3	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.07	mg/kg	11.01.2019 16:18	U	50
Isopropylbenzene	98-82-8	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
m,p-Xylenes	179601-23-1	BRL	0.107	mg/kg	11.01.2019 16:18	U	50
Methylene Chloride	75-09-2	BRL	1.07	mg/kg	11.01.2019 16:18	U	50
MTBE	1634-04-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Naphthalene	91-20-3	BRL	0.534	mg/kg	11.01.2019 16:18	U	50
n-Butylbenzene	104-51-8	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
n-Propylbenzene	103-65-1	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
o-Xylene	95-47-6	BRL	0.0534	mg/kg	11.01.2019 16:18	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Sec-Butylbenzene	135-98-8	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Styrene	100-42-5	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
tert-Butylbenzene	98-06-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Tetrachloroethylene	127-18-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Toluene	108-88-3	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Total Xylenes	1330-20-7	BRL	0.0534	mg/kg	11.01.2019 16:18	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Trichloroethene	79-01-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Trichlorofluoromethane	75-69-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Vinyl Acetate	108-05-4	BRL	0.534	mg/kg	11.01.2019 16:18	U	50
Vinyl Chloride	75-01-4	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
1,3-Butadiene	106-99-0	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Cyclohexane	110-82-7	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Dicyclopentadiene	77-73-6	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Methylcyclohexane	108-87-2	BRL	0.534	mg/kg	11.01.2019 16:18	U	50
n-Hexane	110-54-3	BRL	0.534	mg/kg	11.01.2019 16:18	U	50
4-Ethyltoluene	622-96-8	BRL	0.267	mg/kg	11.01.2019 16:18	U	50
Propene	115-07-1	BRL	0.267	mg/kg	11.01.2019 16:18	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-15.0-15.5**
Lab Sample Id: 641801-003

Matrix: Soil
Date Collected: 10.29.2019 12:00

Date Received:11.01.2019 09:30
Sample Depth: 15.0 - 15.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	92	%	53-142	11.01.2019 16:18	
1,2-Dichloroethane-D4	98	%	56-150	11.01.2019 16:18	
Toluene-D8	104	%	70-130	11.01.2019 16:18	
4-Bromofluorobenzene	96	%	68-152	11.01.2019 16:18	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-102919** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-004 Date Collected: 10.29.2019 12:15

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture: 0

Analyst: ANJ Date Prep: 11.04.2019 10:05 Basis: Dry Weight

Seq Number: 3106373 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	11.04.2019 13:51	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture: 0

Analyst: DEP Date Prep: 11.04.2019 09:50 Basis: Dry Weight

Seq Number: 3106337 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.9**	1.79	mg/kg	11.04.2019 13:46		10
Barium	7440-39-3	**180**	3.57	mg/kg	11.04.2019 13:46		10
Cadmium	7440-43-9	BRL	1.79	mg/kg	11.04.2019 13:46	U	10
Chromium	7440-47-3	**48.8**	3.57	mg/kg	11.04.2019 13:46		10
Lead	7439-92-1	**10.0**	1.79	mg/kg	11.04.2019 13:46		10
Selenium	7782-49-2	BRL	1.79	mg/kg	11.04.2019 13:46	U	10
Silver	7440-22-4	BRL	1.79	mg/kg	11.04.2019 13:46	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-102919**
Lab Sample Id: 641801-004

Matrix: Soil
Date Collected: 10.29.2019 12:15

Date Received:11.01.2019 09:30

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106384

Date Prep: 11.04.2019 07:18

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 20:31	U	1
Acenaphthylene	208-96-8	**0.0175**	0.00167	mg/kg	11.04.2019 20:31		1
Anthracene	120-12-7	**0.0130**	0.00167	mg/kg	11.04.2019 20:31		1
Benzo(a)anthracene	56-55-3	**0.0406**	0.00167	mg/kg	11.04.2019 20:31		1
Benzo(a)pyrene	50-32-8	**0.0676**	0.00167	mg/kg	11.04.2019 20:31		1
Benzo(b)fluoranthene	205-99-2	**0.0674**	0.00167	mg/kg	11.04.2019 20:31		1
Benzo(g,h,i)perylene	191-24-2	**0.0560**	0.00167	mg/kg	11.04.2019 20:31		1
Benzo(k)fluoranthene	207-08-9	**0.0269**	0.00167	mg/kg	11.04.2019 20:31		1
Chrysene	218-01-9	**0.0460**	0.00167	mg/kg	11.04.2019 20:31		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 20:31	U	1
Fluoranthene	206-44-0	**0.127**	0.00167	mg/kg	11.04.2019 20:31		1
Fluorene	86-73-7	**0.00482**	0.00167	mg/kg	11.04.2019 20:31		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0401**	0.00167	mg/kg	11.04.2019 20:31		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.04.2019 20:31	U	1
Phenanthrene	85-01-8	**0.0837**	0.00167	mg/kg	11.04.2019 20:31		1
Pyrene	129-00-0	**0.155**	0.00167	mg/kg	11.04.2019 20:31		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	109	%	31-130	11.04.2019 20:31	
2-Fluorobiphenyl	108	%	51-133	11.04.2019 20:31	
Terphenyl-D14	112	%	46-137	11.04.2019 20:31	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-102919**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-004
Date Collected: 10.29.2019 12:15

Analytical Method: Volatiles by SW 8260C
Prep Method: SW5035A
Tech: SAD
% Moisture:
Analyst: SAD
Date Prep: 11.01.2019 15:00
Basis: Wet Weight
Seq Number: 3106167
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,1-Dichloroethane	75-34-3	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,1-Dichloroethene	75-35-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,1-Dichloropropene	563-58-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2-Dibromoethane	106-93-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2-Dichloroethane	107-06-2	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,2-Dichloropropane	78-87-5	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,3-Dichloropropane	142-28-9	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
2,2-Dichloropropane	594-20-7	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
2-Butanone	78-93-3	BRL	1.04	mg/kg	11.01.2019 16:40	U	50
2-Chlorotoluene	95-49-8	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
2-Hexanone	591-78-6	BRL	2.60	mg/kg	11.01.2019 16:40	U	50
4-Chlorotoluene	106-43-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.60	mg/kg	11.01.2019 16:40	U	50
Acetone	67-64-1	BRL	5.20	mg/kg	11.01.2019 16:40	U	50
Benzene	71-43-2	BRL	0.0520	mg/kg	11.01.2019 16:40	U	50
Bromobenzene	108-86-1	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Bromochloromethane	74-97-5	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Bromodichloromethane	75-27-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Bromoform	75-25-2	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Bromomethane	74-83-9	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Carbon Disulfide	75-15-0	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Carbon Tetrachloride	56-23-5	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Chlorobenzene	108-90-7	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Chloroethane	75-00-3	BRL	0.520	mg/kg	11.01.2019 16:40	U	50
Chloroform	67-66-3	BRL	0.260	mg/kg	11.01.2019 16:40	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-102919**
Lab Sample Id: 641801-004

Matrix: Soil
Date Collected: 10.29.2019 12:15

Date Received:11.01.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Dibromochloromethane	124-48-1	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Dibromomethane	74-95-3	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Ethylbenzene	100-41-4	BRL	0.0520	mg/kg	11.01.2019 16:40	U	50
Hexachlorobutadiene	87-68-3	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.04	mg/kg	11.01.2019 16:40	U	50
Isopropylbenzene	98-82-8	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
m,p-Xylenes	179601-23-1	BRL	0.104	mg/kg	11.01.2019 16:40	U	50
Methylene Chloride	75-09-2	BRL	1.04	mg/kg	11.01.2019 16:40	U	50
MTBE	1634-04-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Naphthalene	91-20-3	BRL	0.520	mg/kg	11.01.2019 16:40	U	50
n-Butylbenzene	104-51-8	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
n-Propylbenzene	103-65-1	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
o-Xylene	95-47-6	BRL	0.0520	mg/kg	11.01.2019 16:40	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Sec-Butylbenzene	135-98-8	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Styrene	100-42-5	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
tert-Butylbenzene	98-06-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Tetrachloroethylene	127-18-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Toluene	108-88-3	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Total Xylenes	1330-20-7	BRL	0.0520	mg/kg	11.01.2019 16:40	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Trichloroethene	79-01-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Trichlorofluoromethane	75-69-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Vinyl Acetate	108-05-4	BRL	0.520	mg/kg	11.01.2019 16:40	U	50
Vinyl Chloride	75-01-4	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
1,3-Butadiene	106-99-0	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Cyclohexane	110-82-7	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Dicyclopentadiene	77-73-6	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Methylcyclohexane	108-87-2	BRL	0.520	mg/kg	11.01.2019 16:40	U	50
n-Hexane	110-54-3	BRL	0.520	mg/kg	11.01.2019 16:40	U	50
4-Ethyltoluene	622-96-8	BRL	0.260	mg/kg	11.01.2019 16:40	U	50
Propene	115-07-1	BRL	0.260	mg/kg	11.01.2019 16:40	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-102919**
Lab Sample Id: 641801-004

Matrix: Soil
Date Collected: 10.29.2019 12:15

Date Received:11.01.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	93	%	53-142	11.01.2019 16:40	
1,2-Dichloroethane-D4	100	%	56-150	11.01.2019 16:40	
Toluene-D8	104	%	70-130	11.01.2019 16:40	
4-Bromofluorobenzene	97	%	68-152	11.01.2019 16:40	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B16-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-005	Date Collected:	10.29.2019 12:20	Sample Depth:	19.5 - 20.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 10:05	Basis:	Dry Weight
Seq Number:	3106373			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0200	mg/kg	11.04.2019 13:53	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	0
Analyst:	DEP	Date Prep:	11.04.2019 09:50	Basis:	Dry Weight
Seq Number:	3106337			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.7**	1.89	mg/kg	11.04.2019 13:49		10
Barium	7440-39-3	**181**	3.77	mg/kg	11.04.2019 13:49		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.04.2019 13:49	U	10
Chromium	7440-47-3	**37.5**	3.77	mg/kg	11.04.2019 13:49		10
Lead	7439-92-1	**9.81**	1.89	mg/kg	11.04.2019 13:49		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.04.2019 13:49	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.04.2019 13:49	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-19.5-20.0**
Lab Sample Id: 641801-005

Matrix: Soil
Date Collected: 10.29.2019 12:20

Date Received:11.01.2019 09:30
Sample Depth: 19.5 - 20.0

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106384

Date Prep: 11.04.2019 07:21

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.04.2019 20:48	U	1
Acenaphthylene	208-96-8	**0.0241**	0.00166	mg/kg	11.04.2019 20:48		1
Anthracene	120-12-7	**0.0168**	0.00166	mg/kg	11.04.2019 20:48		1
Benzo(a)anthracene	56-55-3	**0.0505**	0.00166	mg/kg	11.04.2019 20:48		1
Benzo(a)pyrene	50-32-8	**0.0851**	0.00166	mg/kg	11.04.2019 20:48		1
Benzo(b)fluoranthene	205-99-2	**0.100**	0.00166	mg/kg	11.04.2019 20:48		1
Benzo(g,h,i)perylene	191-24-2	**0.0731**	0.00166	mg/kg	11.04.2019 20:48		1
Benzo(k)fluoranthene	207-08-9	**0.0245**	0.00166	mg/kg	11.04.2019 20:48		1
Chrysene	218-01-9	**0.0589**	0.00166	mg/kg	11.04.2019 20:48		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.04.2019 20:48	U	1
Fluoranthene	206-44-0	**0.157**	0.00166	mg/kg	11.04.2019 20:48		1
Fluorene	86-73-7	**0.00625**	0.00166	mg/kg	11.04.2019 20:48		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0509**	0.00166	mg/kg	11.04.2019 20:48		1
Naphthalene	91-20-3	**0.0188**	0.0166	mg/kg	11.04.2019 20:48		1
Phenanthrene	85-01-8	**0.113**	0.00166	mg/kg	11.04.2019 20:48		1
Pyrene	129-00-0	**0.191**	0.00166	mg/kg	11.04.2019 20:48		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	109	%	31-130	11.04.2019 20:48	
2-Fluorobiphenyl	107	%	51-133	11.04.2019 20:48	
Terphenyl-D14	116	%	46-137	11.04.2019 20:48	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B16-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-005	Date Collected:	10.29.2019 12:20	Sample Depth:	19.5 - 20.0
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,1-Dichloroethane	75-34-3	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,1-Dichloroethene	75-35-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,1-Dichloropropene	563-58-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2-Dibromoethane	106-93-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2-Dichloroethane	107-06-2	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,2-Dichloropropane	78-87-5	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,3-Dichloropropane	142-28-9	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
2,2-Dichloropropane	594-20-7	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
2-Butanone	78-93-3	BRL	1.10	mg/kg	11.01.2019 17:01	U	50
2-Chlorotoluene	95-49-8	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
2-Hexanone	591-78-6	BRL	2.75	mg/kg	11.01.2019 17:01	U	50
4-Chlorotoluene	106-43-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.75	mg/kg	11.01.2019 17:01	U	50
Acetone	67-64-1	BRL	5.49	mg/kg	11.01.2019 17:01	U	50
Benzene	71-43-2	BRL	0.0549	mg/kg	11.01.2019 17:01	U	50
Bromobenzene	108-86-1	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Bromochloromethane	74-97-5	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Bromodichloromethane	75-27-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Bromoform	75-25-2	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Bromomethane	74-83-9	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Carbon Disulfide	75-15-0	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Carbon Tetrachloride	56-23-5	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Chlorobenzene	108-90-7	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Chloroethane	75-00-3	BRL	0.549	mg/kg	11.01.2019 17:01	U	50
Chloroform	67-66-3	BRL	0.275	mg/kg	11.01.2019 17:01	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-19.5-20.0**
Lab Sample Id: 641801-005

Matrix: Soil
Date Collected: 10.29.2019 12:20

Date Received:11.01.2019 09:30
Sample Depth: 19.5 - 20.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Dibromochloromethane	124-48-1	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Dibromomethane	74-95-3	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Ethylbenzene	100-41-4	BRL	0.0549	mg/kg	11.01.2019 17:01	U	50
Hexachlorobutadiene	87-68-3	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.10	mg/kg	11.01.2019 17:01	U	50
Isopropylbenzene	98-82-8	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
m,p-Xylenes	179601-23-1	BRL	0.110	mg/kg	11.01.2019 17:01	U	50
Methylene Chloride	75-09-2	BRL	1.10	mg/kg	11.01.2019 17:01	U	50
MTBE	1634-04-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Naphthalene	91-20-3	BRL	0.549	mg/kg	11.01.2019 17:01	U	50
n-Butylbenzene	104-51-8	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
n-Propylbenzene	103-65-1	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
o-Xylene	95-47-6	BRL	0.0549	mg/kg	11.01.2019 17:01	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Sec-Butylbenzene	135-98-8	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Styrene	100-42-5	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
tert-Butylbenzene	98-06-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Tetrachloroethylene	127-18-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Toluene	108-88-3	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Total Xylenes	1330-20-7	BRL	0.0549	mg/kg	11.01.2019 17:01	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Trichloroethene	79-01-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Trichlorofluoromethane	75-69-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Vinyl Acetate	108-05-4	BRL	0.549	mg/kg	11.01.2019 17:01	U	50
Vinyl Chloride	75-01-4	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
1,3-Butadiene	106-99-0	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Cyclohexane	110-82-7	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Dicyclopentadiene	77-73-6	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Methylcyclohexane	108-87-2	BRL	0.549	mg/kg	11.01.2019 17:01	U	50
n-Hexane	110-54-3	BRL	0.549	mg/kg	11.01.2019 17:01	U	50
4-Ethyltoluene	622-96-8	BRL	0.275	mg/kg	11.01.2019 17:01	U	50
Propene	115-07-1	BRL	0.275	mg/kg	11.01.2019 17:01	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B16-19.5-20.0**
Lab Sample Id: 641801-005

Matrix: Soil
Date Collected: 10.29.2019 12:20

Date Received:11.01.2019 09:30
Sample Depth: 19.5 - 20.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	90	%	53-142	11.01.2019 17:01	
1,2-Dichloroethane-D4	100	%	56-150	11.01.2019 17:01	
Toluene-D8	104	%	70-130	11.01.2019 17:01	
4-Bromofluorobenzene	97	%	68-152	11.01.2019 17:01	

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APS, Phoenix, AZ

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Sample Id: **D-B28-5.0-5.5**
Lab Sample Id: 641801-006
Matrix: Soil
Date Collected: 10.29.2019 12:45
Date Received:11.01.2019 09:30
Sample Depth: 5.0 - 5.5

Analytical Method: Total Cyanide by SW 9012
Tech: KCS
Analyst: KCS
Seq Number: 3106209
Date Prep: 11.01.2019 14:00
Prep Method: E335.4P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0576	mg/kg	11.01.2019 15:55	U	1

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106373
Date Prep: 11.04.2019 10:05
Prep Method: SW7471P
% Moisture: 0
Basis: Dry Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.04.2019 13:55	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106337
Date Prep: 11.04.2019 09:50
Prep Method: SW3050B
% Moisture: 0
Basis: Dry Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.1**	1.89	mg/kg	11.04.2019 13:52		10
Barium	7440-39-3	**84.3**	3.77	mg/kg	11.04.2019 13:52		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.04.2019 13:52	U	10
Chromium	7440-47-3	**9.30**	3.77	mg/kg	11.04.2019 13:52		10
Lead	7439-92-1	**10.9**	1.89	mg/kg	11.04.2019 13:52		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.04.2019 13:52	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.04.2019 13:52	U	10

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APS, Phoenix, AZ

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Sample Id: **D-B28-5.0-5.5** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-006 Date Collected: 10.29.2019 12:45 Sample Depth: 5.0 - 5.5

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.04.2019 11:16		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.31**		SU	11.04.2019 12:44		1
Temperature	TEMP	**25.9**		Deg C	11.04.2019 12:44	+	1

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APS, Phoenix, AZ

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Sample Id: **D-B28-5.0-5.5**
Lab Sample Id: 641801-006

Matrix: Soil
Date Collected: 10.29.2019 12:45

Date Received:11.01.2019 09:30
Sample Depth: 5.0 - 5.5

Analytical Method: PCBs by SW 8082A
Tech: JOZ
Analyst: SHM
Seq Number: 3106445

Date Prep: 11.04.2019 11:09

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0166	mg/kg	11.05.2019 11:25	U	1
PCB-1221	11104-28-2	BRL	0.0166	mg/kg	11.05.2019 11:25	U	1
PCB-1232	11141-16-5	BRL	0.0166	mg/kg	11.05.2019 11:25	U	1
PCB-1242	53469-21-9	BRL	0.0166	mg/kg	11.05.2019 11:25	U	1
PCB-1248	12672-29-6	BRL	0.0166	mg/kg	11.05.2019 11:25	U	1
PCB-1254	11097-69-1	BRL	0.0166	mg/kg	11.05.2019 11:25	U	1
PCB-1260	11096-82-5	BRL	0.0166	mg/kg	11.05.2019 11:25	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	120	%	39-125	11.05.2019 11:25	
Tetrachloro-m-xylene	80	%	37-124	11.05.2019 11:25	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B28-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-006	Date Collected:	10.29.2019 12:45	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 11:50	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.05.2019 17:22	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.05.2019 17:22	U	1
Anthracene	120-12-7	**0.00206**	0.00167	mg/kg	11.05.2019 17:22		1
Benzo(a)anthracene	56-55-3	**0.0104**	0.00167	mg/kg	11.05.2019 17:22		1
Benzo(a)pyrene	50-32-8	**0.0177**	0.00167	mg/kg	11.05.2019 17:22		1
Benzo(b)fluoranthene	205-99-2	**0.0291**	0.00167	mg/kg	11.05.2019 17:22		1
Benzo(g,h,i)perylene	191-24-2	**0.0201**	0.00167	mg/kg	11.05.2019 17:22		1
Benzo(k)fluoranthene	207-08-9	**0.00705**	0.00167	mg/kg	11.05.2019 17:22		1
Chrysene	218-01-9	**0.0148**	0.00167	mg/kg	11.05.2019 17:22		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.05.2019 17:22	U	1
Fluoranthene	206-44-0	**0.0261**	0.00167	mg/kg	11.05.2019 17:22		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.05.2019 17:22	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0158**	0.00167	mg/kg	11.05.2019 17:22		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.05.2019 17:22	U	1
Phenanthrene	85-01-8	**0.0110**	0.00167	mg/kg	11.05.2019 17:22		1
Pyrene	129-00-0	**0.0216**	0.00167	mg/kg	11.05.2019 17:22		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	110	%	31-130	11.05.2019 17:22	
2-Fluorobiphenyl	111	%	51-133	11.05.2019 17:22	
Terphenyl-D14	108	%	46-137	11.05.2019 17:22	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B28-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-006	Date Collected:	10.29.2019 12:45	Sample Depth:	5.0 - 5.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,1-Dichloroethane	75-34-3	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,1-Dichloroethene	75-35-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,1-Dichloropropene	563-58-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2-Dibromoethane	106-93-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2-Dichloroethane	107-06-2	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,2-Dichloropropane	78-87-5	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,3-Dichloropropane	142-28-9	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
2,2-Dichloropropane	594-20-7	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
2-Butanone	78-93-3	BRL	1.04	mg/kg	11.01.2019 17:23	U	50
2-Chlorotoluene	95-49-8	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
2-Hexanone	591-78-6	BRL	2.59	mg/kg	11.01.2019 17:23	U	50
4-Chlorotoluene	106-43-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.59	mg/kg	11.01.2019 17:23	U	50
Acetone	67-64-1	BRL	5.18	mg/kg	11.01.2019 17:23	U	50
Benzene	71-43-2	BRL	0.0518	mg/kg	11.01.2019 17:23	U	50
Bromobenzene	108-86-1	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Bromochloromethane	74-97-5	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Bromodichloromethane	75-27-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Bromoform	75-25-2	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Bromomethane	74-83-9	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Carbon Disulfide	75-15-0	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Carbon Tetrachloride	56-23-5	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Chlorobenzene	108-90-7	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Chloroethane	75-00-3	BRL	0.518	mg/kg	11.01.2019 17:23	U	50
Chloroform	67-66-3	BRL	0.259	mg/kg	11.01.2019 17:23	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B28-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-006	Date Collected:	10.29.2019 12:45	Sample Depth:	5.0 - 5.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Dibromochloromethane	124-48-1	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Dibromomethane	74-95-3	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Ethylbenzene	100-41-4	BRL	0.0518	mg/kg	11.01.2019 17:23	U	50
Hexachlorobutadiene	87-68-3	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.04	mg/kg	11.01.2019 17:23	U	50
Isopropylbenzene	98-82-8	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
m,p-Xylenes	179601-23-1	BRL	0.104	mg/kg	11.01.2019 17:23	U	50
Methylene Chloride	75-09-2	BRL	1.04	mg/kg	11.01.2019 17:23	U	50
MTBE	1634-04-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Naphthalene	91-20-3	BRL	0.518	mg/kg	11.01.2019 17:23	U	50
n-Butylbenzene	104-51-8	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
n-Propylbenzene	103-65-1	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
o-Xylene	95-47-6	BRL	0.0518	mg/kg	11.01.2019 17:23	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Sec-Butylbenzene	135-98-8	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Styrene	100-42-5	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
tert-Butylbenzene	98-06-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Tetrachloroethylene	127-18-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Toluene	108-88-3	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Total Xylenes	1330-20-7	BRL	0.0518	mg/kg	11.01.2019 17:23	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Trichloroethene	79-01-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Trichlorofluoromethane	75-69-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Vinyl Acetate	108-05-4	BRL	0.518	mg/kg	11.01.2019 17:23	U	50
Vinyl Chloride	75-01-4	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
1,3-Butadiene	106-99-0	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Cyclohexane	110-82-7	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Dicyclopentadiene	77-73-6	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Methylcyclohexane	108-87-2	BRL	0.518	mg/kg	11.01.2019 17:23	U	50
n-Hexane	110-54-3	BRL	0.518	mg/kg	11.01.2019 17:23	U	50
4-Ethyltoluene	622-96-8	BRL	0.259	mg/kg	11.01.2019 17:23	U	50
Propene	115-07-1	BRL	0.259	mg/kg	11.01.2019 17:23	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B28-5.0-5.5**
Lab Sample Id: 641801-006

Matrix: Soil
Date Collected: 10.29.2019 12:45

Date Received:11.01.2019 09:30
Sample Depth: 5.0 - 5.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	92	%	53-142	11.01.2019 17:23	
1,2-Dichloroethane-D4	101	%	56-150	11.01.2019 17:23	
Toluene-D8	105	%	70-130	11.01.2019 17:23	
4-Bromofluorobenzene	95	%	68-152	11.01.2019 17:23	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD03-102919** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-007 Date Collected: 10.29.2019 12:55

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P

Tech: KCS % Moisture:

Analyst: KCS Date Prep: 11.01.2019 14:00 Basis: Wet Weight

Seq Number: 3106209 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0594	mg/kg	11.01.2019 15:56	U	1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture: 0

Analyst: ANJ Date Prep: 11.04.2019 10:05 Basis: Dry Weight

Seq Number: 3106373 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0167	mg/kg	11.04.2019 13:57	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.04.2019 11:30 Basis: Wet Weight

Seq Number: 3106408 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**23.1**	1.72	mg/kg	11.04.2019 21:40		10
Barium	7440-39-3	**110**	3.45	mg/kg	11.04.2019 21:40		10
Cadmium	7440-43-9	BRL	1.72	mg/kg	11.04.2019 21:40	U	10
Chromium	7440-47-3	**11.6**	3.45	mg/kg	11.04.2019 21:40		10
Lead	7439-92-1	**18.2**	1.72	mg/kg	11.04.2019 21:40		10
Selenium	7782-49-2	BRL	1.72	mg/kg	11.04.2019 21:40	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	11.04.2019 21:40	U	10

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD03-102919** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-007 Date Collected: 10.29.2019 12:55

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.04.2019 11:34		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.14**		SU	11.04.2019 12:44		1
Temperature	TEMP	**25.3**		Deg C	11.04.2019 12:44	+	1

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD03-102919**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-007
Date Collected: 10.29.2019 12:55

Analytical Method: PCBs by SW 8082A
Prep Method: SW3550
Tech: JOZ
% Moisture:
Analyst: SHM
Date Prep: 11.04.2019 11:12
Basis: Wet Weight
Seq Number: 3106445
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0333	mg/kg	11.05.2019 11:47	U	2
PCB-1221	11104-28-2	BRL	0.0333	mg/kg	11.05.2019 11:47	U	2
PCB-1232	11141-16-5	BRL	0.0333	mg/kg	11.05.2019 11:47	U	2
PCB-1242	53469-21-9	BRL	0.0333	mg/kg	11.05.2019 11:47	U	2
PCB-1248	12672-29-6	BRL	0.0333	mg/kg	11.05.2019 11:47	U	2
PCB-1254	11097-69-1	BRL	0.0333	mg/kg	11.05.2019 11:47	U	2
PCB-1260	11096-82-5	BRL	0.0333	mg/kg	11.05.2019 11:47	U	2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	116	%	39-125	11.05.2019 11:47	
Tetrachloro-m-xylene	79	%	37-124	11.05.2019 11:47	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD03-102919**
Lab Sample Id: 641801-007

Matrix: Soil
Date Collected: 10.29.2019 12:55

Date Received:11.01.2019 09:30

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106384

Date Prep: 11.04.2019 07:27

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 21:21	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.04.2019 21:21	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.04.2019 21:21	U	1
Benzo(a)anthracene	56-55-3	**0.00596**	0.00167	mg/kg	11.04.2019 21:21		1
Benzo(a)pyrene	50-32-8	**0.00826**	0.00167	mg/kg	11.04.2019 21:21		1
Benzo(b)fluoranthene	205-99-2	**0.0119**	0.00167	mg/kg	11.04.2019 21:21		1
Benzo(g,h,i)perylene	191-24-2	**0.00581**	0.00167	mg/kg	11.04.2019 21:21		1
Benzo(k)fluoranthene	207-08-9	**0.00307**	0.00167	mg/kg	11.04.2019 21:21		1
Chrysene	218-01-9	**0.00764**	0.00167	mg/kg	11.04.2019 21:21		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 21:21	U	1
Fluoranthene	206-44-0	**0.0125**	0.00167	mg/kg	11.04.2019 21:21		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.04.2019 21:21	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00471**	0.00167	mg/kg	11.04.2019 21:21		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.04.2019 21:21	U	1
Phenanthrene	85-01-8	**0.00619**	0.00167	mg/kg	11.04.2019 21:21		1
Pyrene	129-00-0	**0.0131**	0.00167	mg/kg	11.04.2019 21:21		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	89	%	31-130	11.04.2019 21:21	
2-Fluorobiphenyl	105	%	51-133	11.04.2019 21:21	
Terphenyl-D14	111	%	46-137	11.04.2019 21:21	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD03-102919**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-007
Date Collected: 10.29.2019 12:55

Analytical Method: Volatiles by SW 8260C
Prep Method: SW5035A
Tech: SAD
% Moisture:
Analyst: SAD
Date Prep: 11.01.2019 15:00
Basis: Wet Weight
Seq Number: 3106167
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,1-Dichloroethane	75-34-3	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,1-Dichloroethene	75-35-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,1-Dichloropropene	563-58-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2-Dibromoethane	106-93-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2-Dichloroethane	107-06-2	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,2-Dichloropropane	78-87-5	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,3-Dichloropropane	142-28-9	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
2,2-Dichloropropane	594-20-7	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
2-Butanone	78-93-3	BRL	0.906	mg/kg	11.01.2019 17:45	U	50
2-Chlorotoluene	95-49-8	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
2-Hexanone	591-78-6	BRL	2.26	mg/kg	11.01.2019 17:45	U	50
4-Chlorotoluene	106-43-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.26	mg/kg	11.01.2019 17:45	U	50
Acetone	67-64-1	BRL	4.53	mg/kg	11.01.2019 17:45	U	50
Benzene	71-43-2	BRL	0.0453	mg/kg	11.01.2019 17:45	U	50
Bromobenzene	108-86-1	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Bromochloromethane	74-97-5	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Bromodichloromethane	75-27-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Bromoform	75-25-2	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Bromomethane	74-83-9	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Carbon Disulfide	75-15-0	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Carbon Tetrachloride	56-23-5	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Chlorobenzene	108-90-7	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Chloroethane	75-00-3	BRL	0.453	mg/kg	11.01.2019 17:45	U	50
Chloroform	67-66-3	BRL	0.226	mg/kg	11.01.2019 17:45	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD03-102919**
Lab Sample Id: 641801-007

Matrix: Soil
Date Collected: 10.29.2019 12:55

Date Received:11.01.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Dibromochloromethane	124-48-1	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Dibromomethane	74-95-3	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Ethylbenzene	100-41-4	BRL	0.0453	mg/kg	11.01.2019 17:45	U	50
Hexachlorobutadiene	87-68-3	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.906	mg/kg	11.01.2019 17:45	U	50
Isopropylbenzene	98-82-8	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
m,p-Xylenes	179601-23-1	BRL	0.0906	mg/kg	11.01.2019 17:45	U	50
Methylene Chloride	75-09-2	BRL	0.906	mg/kg	11.01.2019 17:45	U	50
MTBE	1634-04-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Naphthalene	91-20-3	BRL	0.453	mg/kg	11.01.2019 17:45	U	50
n-Butylbenzene	104-51-8	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
n-Propylbenzene	103-65-1	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
o-Xylene	95-47-6	BRL	0.0453	mg/kg	11.01.2019 17:45	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Sec-Butylbenzene	135-98-8	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Styrene	100-42-5	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
tert-Butylbenzene	98-06-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Tetrachloroethylene	127-18-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Toluene	108-88-3	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Total Xylenes	1330-20-7	BRL	0.0453	mg/kg	11.01.2019 17:45	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Trichloroethene	79-01-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Trichlorofluoromethane	75-69-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Vinyl Acetate	108-05-4	BRL	0.453	mg/kg	11.01.2019 17:45	U	50
Vinyl Chloride	75-01-4	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
1,3-Butadiene	106-99-0	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Cyclohexane	110-82-7	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Dicyclopentadiene	77-73-6	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Methylcyclohexane	108-87-2	BRL	0.453	mg/kg	11.01.2019 17:45	U	50
n-Hexane	110-54-3	BRL	0.453	mg/kg	11.01.2019 17:45	U	50
4-Ethyltoluene	622-96-8	BRL	0.226	mg/kg	11.01.2019 17:45	U	50
Propene	115-07-1	BRL	0.226	mg/kg	11.01.2019 17:45	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD03-102919**
Lab Sample Id: 641801-007

Matrix: Soil
Date Collected: 10.29.2019 12:55

Date Received:11.01.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	91	%	53-142	11.01.2019 17:45	
1,2-Dichloroethane-D4	100	%	56-150	11.01.2019 17:45	
Toluene-D8	104	%	70-130	11.01.2019 17:45	
4-Bromofluorobenzene	96	%	68-152	11.01.2019 17:45	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B14-7.5-8.0**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-008
Date Collected: 10.29.2019 13:10
Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 10:05
Basis: Dry Weight
Seq Number: 3106373
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0174**	0.0172	mg/kg	11.04.2019 13:59		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.3**	1.89	mg/kg	11.04.2019 21:43		10
Barium	7440-39-3	**247**	3.77	mg/kg	11.04.2019 21:43		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.04.2019 21:43	U	10
Chromium	7440-47-3	**16.0**	3.77	mg/kg	11.04.2019 21:43		10
Lead	7439-92-1	**23.2**	1.89	mg/kg	11.04.2019 21:43		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.04.2019 21:43	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.04.2019 21:43	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B14-7.5-8.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-008	Date Collected:	10.29.2019 13:10	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:30	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00833	mg/kg	11.04.2019 18:51	U	5
Acenaphthylene	208-96-8	**0.0694**	0.00833	mg/kg	11.04.2019 18:51		5
Anthracene	120-12-7	**0.0886**	0.00833	mg/kg	11.04.2019 18:51		5
Benzo(a)anthracene	56-55-3	**0.274**	0.00833	mg/kg	11.04.2019 18:51		5
Benzo(a)pyrene	50-32-8	**0.301**	0.00833	mg/kg	11.04.2019 18:51		5
Benzo(b)fluoranthene	205-99-2	**0.382**	0.00833	mg/kg	11.04.2019 18:51		5
Benzo(g,h,i)perylene	191-24-2	**0.344**	0.00833	mg/kg	11.04.2019 18:51		5
Benzo(k)fluoranthene	207-08-9	**0.128**	0.00833	mg/kg	11.04.2019 18:51		5
Chrysene	218-01-9	**0.269**	0.00833	mg/kg	11.04.2019 18:51		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00833	mg/kg	11.04.2019 18:51	U	5
Fluoranthene	206-44-0	**0.639**	0.00833	mg/kg	11.04.2019 18:51		5
Fluorene	86-73-7	BRL	0.00833	mg/kg	11.04.2019 18:51	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.219**	0.00833	mg/kg	11.04.2019 18:51		5
Naphthalene	91-20-3	BRL	0.0833	mg/kg	11.04.2019 18:51	U	5
Phenanthrene	85-01-8	**0.370**	0.00833	mg/kg	11.04.2019 18:51		5
Pyrene	129-00-0	**0.584**	0.00833	mg/kg	11.04.2019 18:51		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	64	%	31-130	11.04.2019 18:51	
2-Fluorobiphenyl	66	%	51-133	11.04.2019 18:51	
Terphenyl-D14	83	%	46-137	11.04.2019 18:51	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B14-10.0-10.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-009
Date Collected: 10.29.2019 13:15
Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 10:05
Basis: Dry Weight
Seq Number: 3106373
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.04.2019 14:01	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**24.8**	2.00	mg/kg	11.04.2019 21:46		10
Barium	7440-39-3	**160**	4.00	mg/kg	11.04.2019 21:46		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.04.2019 21:46	U	10
Chromium	7440-47-3	**16.4**	4.00	mg/kg	11.04.2019 21:46		10
Lead	7439-92-1	**20.7**	2.00	mg/kg	11.04.2019 21:46		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.04.2019 21:46	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.04.2019 21:46	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B14-10.0-10.5**
Lab Sample Id: 641801-009

Matrix: Soil
Date Collected: 10.29.2019 13:15

Date Received:11.01.2019 09:30
Sample Depth: 10.0 - 10.5

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106384

Date Prep: 11.04.2019 07:33

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 21:38	U	1
Acenaphthylene	208-96-8	**0.102**	0.00167	mg/kg	11.04.2019 21:38		1
Anthracene	120-12-7	**0.0437**	0.00167	mg/kg	11.04.2019 21:38		1
Benzo(a)anthracene	56-55-3	**0.131**	0.00167	mg/kg	11.04.2019 21:38		1
Benzo(a)pyrene	50-32-8	**0.159**	0.00167	mg/kg	11.04.2019 21:38		1
Benzo(b)fluoranthene	205-99-2	**0.223**	0.00167	mg/kg	11.04.2019 21:38		1
Benzo(g,h,i)perylene	191-24-2	**0.157**	0.00167	mg/kg	11.04.2019 21:38		1
Benzo(k)fluoranthene	207-08-9	**0.0745**	0.00167	mg/kg	11.04.2019 21:38		1
Chrysene	218-01-9	**0.138**	0.00167	mg/kg	11.04.2019 21:38		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 21:38	U	1
Fluoranthene	206-44-0	**0.292**	0.00167	mg/kg	11.04.2019 21:38		1
Fluorene	86-73-7	**0.00366**	0.00167	mg/kg	11.04.2019 21:38		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0959**	0.00167	mg/kg	11.04.2019 21:38		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.04.2019 21:38	U	1
Phenanthrene	85-01-8	**0.148**	0.00167	mg/kg	11.04.2019 21:38		1
Pyrene	129-00-0	**0.293**	0.00167	mg/kg	11.04.2019 21:38		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	87	%	31-130	11.04.2019 21:38	
2-Fluorobiphenyl	99	%	51-133	11.04.2019 21:38	
Terphenyl-D14	109	%	46-137	11.04.2019 21:38	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B14-15.0-15.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-010
Date Collected: 10.29.2019 13:45
Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 10:05
Basis: Dry Weight
Seq Number: 3106373
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	11.04.2019 14:03	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**24.5**	1.67	mg/kg	11.04.2019 21:49		10
Barium	7440-39-3	**185**	3.33	mg/kg	11.04.2019 21:49		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.04.2019 21:49	U	10
Chromium	7440-47-3	**23.5**	3.33	mg/kg	11.04.2019 21:49		10
Lead	7439-92-1	**14.0**	1.67	mg/kg	11.04.2019 21:49		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.04.2019 21:49	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.04.2019 21:49	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B14-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-010	Date Collected:	10.29.2019 13:45	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:36	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.04.2019 21:54	U	1
Acenaphthylene	208-96-8	**0.0475**	0.00166	mg/kg	11.04.2019 21:54		1
Anthracene	120-12-7	**0.00412**	0.00166	mg/kg	11.04.2019 21:54		1
Benzo(a)anthracene	56-55-3	**0.0104**	0.00166	mg/kg	11.04.2019 21:54		1
Benzo(a)pyrene	50-32-8	**0.0123**	0.00166	mg/kg	11.04.2019 21:54		1
Benzo(b)fluoranthene	205-99-2	**0.0181**	0.00166	mg/kg	11.04.2019 21:54		1
Benzo(g,h,i)perylene	191-24-2	**0.0135**	0.00166	mg/kg	11.04.2019 21:54		1
Benzo(k)fluoranthene	207-08-9	**0.00480**	0.00166	mg/kg	11.04.2019 21:54		1
Chrysene	218-01-9	**0.0101**	0.00166	mg/kg	11.04.2019 21:54		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.04.2019 21:54	U	1
Fluoranthene	206-44-0	**0.0260**	0.00166	mg/kg	11.04.2019 21:54		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.04.2019 21:54	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00740**	0.00166	mg/kg	11.04.2019 21:54		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.04.2019 21:54	U	1
Phenanthrene	85-01-8	**0.0160**	0.00166	mg/kg	11.04.2019 21:54		1
Pyrene	129-00-0	**0.0237**	0.00166	mg/kg	11.04.2019 21:54		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	91	%	31-130	11.04.2019 21:54	
2-Fluorobiphenyl	106	%	51-133	11.04.2019 21:54	
Terphenyl-D14	107	%	46-137	11.04.2019 21:54	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B14-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-011	Date Collected:	10.29.2019 13:55	Sample Depth:	19.5 - 20.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 10:05	Basis:	Dry Weight
Seq Number:	3106373			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0167	mg/kg	11.04.2019 14:17	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 11:30	Basis:	Wet Weight
Seq Number:	3106408			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.8**	1.75	mg/kg	11.04.2019 21:52		10
Barium	7440-39-3	**209**	3.51	mg/kg	11.04.2019 21:52		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.04.2019 21:52	U	10
Chromium	7440-47-3	**32.2**	3.51	mg/kg	11.04.2019 21:52		10
Lead	7439-92-1	**10.6**	1.75	mg/kg	11.04.2019 21:52		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.04.2019 21:52	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.04.2019 21:52	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B14-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-011	Date Collected:	10.29.2019 13:55	Sample Depth:	19.5 - 20.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:39	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.04.2019 22:11	U	1
Acenaphthylene	208-96-8	**0.0137**	0.00166	mg/kg	11.04.2019 22:11		1
Anthracene	120-12-7	**0.00306**	0.00166	mg/kg	11.04.2019 22:11		1
Benzo(a)anthracene	56-55-3	**0.00723**	0.00166	mg/kg	11.04.2019 22:11		1
Benzo(a)pyrene	50-32-8	**0.0107**	0.00166	mg/kg	11.04.2019 22:11		1
Benzo(b)fluoranthene	205-99-2	**0.0146**	0.00166	mg/kg	11.04.2019 22:11		1
Benzo(g,h,i)perylene	191-24-2	**0.0184**	0.00166	mg/kg	11.04.2019 22:11		1
Benzo(k)fluoranthene	207-08-9	**0.00468**	0.00166	mg/kg	11.04.2019 22:11		1
Chrysene	218-01-9	**0.00799**	0.00166	mg/kg	11.04.2019 22:11		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.04.2019 22:11	U	1
Fluoranthene	206-44-0	**0.0190**	0.00166	mg/kg	11.04.2019 22:11		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.04.2019 22:11	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00855**	0.00166	mg/kg	11.04.2019 22:11		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.04.2019 22:11	U	1
Phenanthrene	85-01-8	**0.0114**	0.00166	mg/kg	11.04.2019 22:11		1
Pyrene	129-00-0	**0.0218**	0.00166	mg/kg	11.04.2019 22:11		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	98	%	31-130	11.04.2019 22:11	
2-Fluorobiphenyl	112	%	51-133	11.04.2019 22:11	
Terphenyl-D14	111	%	46-137	11.04.2019 22:11	

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B22-5.0-5.5** Matrix: Soil Date Received:11.01.2019 09:30
Lab Sample Id: 641801-012 Date Collected: 10.29.2019 14:35 Sample Depth: 5.0 - 5.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.04.2019 10:05 Basis: Dry Weight
Seq Number: 3106373 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0263**	0.0167	mg/kg	11.04.2019 14:19		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.04.2019 11:30 Basis: Wet Weight
Seq Number: 3106408 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**25.8**	1.92	mg/kg	11.04.2019 21:55		10
Barium	7440-39-3	**245**	3.85	mg/kg	11.04.2019 21:55		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.04.2019 21:55	U	10
Chromium	7440-47-3	**9.75**	3.85	mg/kg	11.04.2019 21:55		10
Lead	7439-92-1	**117**	1.92	mg/kg	11.04.2019 21:55		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.04.2019 21:55	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.04.2019 21:55	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B22-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-012	Date Collected:	10.29.2019 14:35	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:42	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0166	mg/kg	11.04.2019 19:08	U	10
Acenaphthylene	208-96-8	**0.0325**	0.0166	mg/kg	11.04.2019 19:08		10
Anthracene	120-12-7	**0.0276**	0.0166	mg/kg	11.04.2019 19:08		10
Benzo(a)anthracene	56-55-3	**0.0907**	0.0166	mg/kg	11.04.2019 19:08		10
Benzo(a)pyrene	50-32-8	**0.113**	0.0166	mg/kg	11.04.2019 19:08		10
Benzo(b)fluoranthene	205-99-2	**0.164**	0.0166	mg/kg	11.04.2019 19:08		10
Benzo(g,h,i)perylene	191-24-2	**0.101**	0.0166	mg/kg	11.04.2019 19:08		10
Benzo(k)fluoranthene	207-08-9	**0.0368**	0.0166	mg/kg	11.04.2019 19:08		10
Chrysene	218-01-9	**0.106**	0.0166	mg/kg	11.04.2019 19:08		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0166	mg/kg	11.04.2019 19:08	U	10
Fluoranthene	206-44-0	**0.244**	0.0166	mg/kg	11.04.2019 19:08		10
Fluorene	86-73-7	BRL	0.0166	mg/kg	11.04.2019 19:08	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0811**	0.0166	mg/kg	11.04.2019 19:08		10
Naphthalene	91-20-3	BRL	0.166	mg/kg	11.04.2019 19:08	U	10
Phenanthrene	85-01-8	**0.162**	0.0166	mg/kg	11.04.2019 19:08		10
Pyrene	129-00-0	**0.252**	0.0166	mg/kg	11.04.2019 19:08		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	95	%	31-130	11.04.2019 19:08	
2-Fluorobiphenyl	97	%	51-133	11.04.2019 19:08	
Terphenyl-D14	103	%	46-137	11.04.2019 19:08	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B22-7.5-8.0**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-013
Date Collected: 10.29.2019 14:50
Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 10:05
Basis: Dry Weight
Seq Number: 3106373
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.04.2019 14:21	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.7**	2.00	mg/kg	11.04.2019 21:58		10
Barium	7440-39-3	**150**	4.00	mg/kg	11.04.2019 21:58		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.04.2019 21:58	U	10
Chromium	7440-47-3	**13.6**	4.00	mg/kg	11.04.2019 21:58		10
Lead	7439-92-1	**25.7**	2.00	mg/kg	11.04.2019 21:58		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.04.2019 21:58	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.04.2019 21:58	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B22-7.5-8.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-013	Date Collected:	10.29.2019 14:50	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:45	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 22:28	U	1
Acenaphthylene	208-96-8	**0.0103**	0.00167	mg/kg	11.04.2019 22:28		1
Anthracene	120-12-7	**0.00711**	0.00167	mg/kg	11.04.2019 22:28		1
Benzo(a)anthracene	56-55-3	**0.0199**	0.00167	mg/kg	11.04.2019 22:28		1
Benzo(a)pyrene	50-32-8	**0.0248**	0.00167	mg/kg	11.04.2019 22:28		1
Benzo(b)fluoranthene	205-99-2	**0.0379**	0.00167	mg/kg	11.04.2019 22:28		1
Benzo(g,h,i)perylene	191-24-2	**0.0167**	0.00167	mg/kg	11.04.2019 22:28		1
Benzo(k)fluoranthene	207-08-9	**0.0122**	0.00167	mg/kg	11.04.2019 22:28		1
Chrysene	218-01-9	**0.0253**	0.00167	mg/kg	11.04.2019 22:28		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 22:28	U	1
Fluoranthene	206-44-0	**0.0625**	0.00167	mg/kg	11.04.2019 22:28		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.04.2019 22:28	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0143**	0.00167	mg/kg	11.04.2019 22:28		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.04.2019 22:28	U	1
Phenanthrene	85-01-8	**0.0539**	0.00167	mg/kg	11.04.2019 22:28		1
Pyrene	129-00-0	**0.0640**	0.00167	mg/kg	11.04.2019 22:28		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	85	%	31-130	11.04.2019 22:28	
2-Fluorobiphenyl	105	%	51-133	11.04.2019 22:28	
Terphenyl-D14	116	%	46-137	11.04.2019 22:28	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B22-15.0-15.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-016
Date Collected: 10.29.2019 15:10
Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 10:05
Basis: Dry Weight
Seq Number: 3106373
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.04.2019 14:23	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**25.0**	1.85	mg/kg	11.04.2019 22:01		10
Barium	7440-39-3	**212**	3.70	mg/kg	11.04.2019 22:01		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.04.2019 22:01	U	10
Chromium	7440-47-3	**63.0**	3.70	mg/kg	11.04.2019 22:01		10
Lead	7439-92-1	**21.6**	1.85	mg/kg	11.04.2019 22:01		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.04.2019 22:01	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.04.2019 22:01	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B22-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-016	Date Collected:	10.29.2019 15:10	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:48	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.04.2019 22:44	U	1
Acenaphthylene	208-96-8	**0.00408**	0.00166	mg/kg	11.04.2019 22:44		1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.04.2019 22:44	U	1
Benzo(a)anthracene	56-55-3	**0.00361**	0.00166	mg/kg	11.04.2019 22:44		1
Benzo(a)pyrene	50-32-8	**0.00418**	0.00166	mg/kg	11.04.2019 22:44		1
Benzo(b)fluoranthene	205-99-2	**0.00699**	0.00166	mg/kg	11.04.2019 22:44		1
Benzo(g,h,i)perylene	191-24-2	**0.00283**	0.00166	mg/kg	11.04.2019 22:44		1
Benzo(k)fluoranthene	207-08-9	**0.00222**	0.00166	mg/kg	11.04.2019 22:44		1
Chrysene	218-01-9	**0.00456**	0.00166	mg/kg	11.04.2019 22:44		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.04.2019 22:44	U	1
Fluoranthene	206-44-0	**0.0104**	0.00166	mg/kg	11.04.2019 22:44		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.04.2019 22:44	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00238**	0.00166	mg/kg	11.04.2019 22:44		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.04.2019 22:44	U	1
Phenanthrene	85-01-8	**0.00921**	0.00166	mg/kg	11.04.2019 22:44		1
Pyrene	129-00-0	**0.0109**	0.00166	mg/kg	11.04.2019 22:44		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	94	%	31-130	11.04.2019 22:44	
2-Fluorobiphenyl	114	%	51-133	11.04.2019 22:44	
Terphenyl-D14	116	%	46-137	11.04.2019 22:44	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B28-10.0-10.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-017
Date Collected: 10.29.2019 15:55
Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 10:05
Basis: Dry Weight
Seq Number: 3106373
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.04.2019 14:25	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.21**	2.00	mg/kg	11.04.2019 22:04		10
Barium	7440-39-3	**94.4**	4.00	mg/kg	11.04.2019 22:04		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.04.2019 22:04	U	10
Chromium	7440-47-3	**10.3**	4.00	mg/kg	11.04.2019 22:04		10
Lead	7439-92-1	**9.89**	2.00	mg/kg	11.04.2019 22:04		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.04.2019 22:04	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.04.2019 22:04	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B28-10.0-10.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-017	Date Collected:	10.29.2019 15:55	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:51	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Acenaphthylene	208-96-8	**0.00284**	0.00165	mg/kg	11.04.2019 23:01		1
Anthracene	120-12-7	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Benzo(b)fluoranthene	205-99-2	**0.00248**	0.00165	mg/kg	11.04.2019 23:01		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Chrysene	218-01-9	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Fluoranthene	206-44-0	**0.00246**	0.00165	mg/kg	11.04.2019 23:01		1
Fluorene	86-73-7	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00165	mg/kg	11.04.2019 23:01	U	1
Naphthalene	91-20-3	BRL	0.0165	mg/kg	11.04.2019 23:01	U	1
Phenanthrene	85-01-8	**0.00169**	0.00165	mg/kg	11.04.2019 23:01		1
Pyrene	129-00-0	**0.00246**	0.00165	mg/kg	11.04.2019 23:01		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	88	%	31-130	11.04.2019 23:01	
2-Fluorobiphenyl	105	%	51-133	11.04.2019 23:01	
Terphenyl-D14	112	%	46-137	11.04.2019 23:01	

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APS, Phoenix, AZ

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Sample Id:	**D-B28-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-018	Date Collected:	10.29.2019 16:15	Sample Depth:	15.0 - 15.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 10:05	Basis:	Dry Weight
Seq Number:	3106373			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	11.04.2019 13:35	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 11:30	Basis:	Wet Weight
Seq Number:	3106408			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.2**	1.67	mg/kg	11.04.2019 21:19		10
Barium	7440-39-3	**82.8**	3.33	mg/kg	11.04.2019 21:19		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.04.2019 21:19	U	10
Chromium	7440-47-3	**12.0**	3.33	mg/kg	11.04.2019 21:19		10
Lead	7439-92-1	**11.2**	1.67	mg/kg	11.04.2019 21:19		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.04.2019 21:19	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.04.2019 21:19	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B28-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-018	Date Collected:	10.29.2019 16:15	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 07:54	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Benzo(b)fluoranthene	205-99-2	**0.00201**	0.00166	mg/kg	11.04.2019 13:02		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Fluoranthene	206-44-0	**0.00233**	0.00166	mg/kg	11.04.2019 13:02		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.04.2019 13:02	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.04.2019 13:02	U	1
Pyrene	129-00-0	**0.00257**	0.00166	mg/kg	11.04.2019 13:02		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	107	%	31-130	11.04.2019 13:02	
2-Fluorobiphenyl	102	%	51-133	11.04.2019 13:02	
Terphenyl-D14	109	%	46-137	11.04.2019 13:02	

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APS, Phoenix, AZ

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Sample Id:	**D-B28-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-019	Date Collected:	10.29.2019 16:25	Sample Depth:	19.5 - 20.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 10:05	Basis:	Dry Weight
Seq Number:	3106373			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0200	mg/kg	11.04.2019 14:27	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 11:30	Basis:	Wet Weight
Seq Number:	3106408			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.1**	1.75	mg/kg	11.04.2019 22:07		10
Barium	7440-39-3	**129**	3.51	mg/kg	11.04.2019 22:07		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.04.2019 22:07	U	10
Chromium	7440-47-3	**20.7**	3.51	mg/kg	11.04.2019 22:07		10
Lead	7439-92-1	**17.7**	1.75	mg/kg	11.04.2019 22:07		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.04.2019 22:07	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.04.2019 22:07	U	10

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Sample Id:	**D-B28-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-019	Date Collected:	10.29.2019 16:25	Sample Depth:	19.5 - 20.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 08:03	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Acenaphthylene	208-96-8	**0.00283**	0.00166	mg/kg	11.04.2019 23:18		1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.04.2019 23:18	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.04.2019 23:18	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	77	%	31-130	11.04.2019 23:18	
2-Fluorobiphenyl	91	%	51-133	11.04.2019 23:18	
Terphenyl-D14	94	%	46-137	11.04.2019 23:18	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B22-10.0-10.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-020
Date Collected: 10.29.2019 14:55
Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 10:05
Basis: Dry Weight
Seq Number: 3106373
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.04.2019 14:29	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**22.0**	2.00	mg/kg	11.04.2019 22:15		10
Barium	7440-39-3	**146**	4.00	mg/kg	11.04.2019 22:15		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.04.2019 22:15	U	10
Chromium	7440-47-3	**22.6**	4.00	mg/kg	11.04.2019 22:15		10
Lead	7439-92-1	**32.3**	2.00	mg/kg	11.04.2019 22:15		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.04.2019 22:15	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.04.2019 22:15	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B22-10.0-10.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-020	Date Collected:	10.29.2019 14:55	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 08:06	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00835	mg/kg	11.04.2019 19:25	U	5
Acenaphthylene	208-96-8	BRL	0.00835	mg/kg	11.04.2019 19:25	U	5
Anthracene	120-12-7	BRL	0.00835	mg/kg	11.04.2019 19:25	U	5
Benzo(a)anthracene	56-55-3	**0.0247**	0.00835	mg/kg	11.04.2019 19:25		5
Benzo(a)pyrene	50-32-8	**0.0282**	0.00835	mg/kg	11.04.2019 19:25		5
Benzo(b)fluoranthene	205-99-2	**0.0419**	0.00835	mg/kg	11.04.2019 19:25		5
Benzo(g,h,i)perylene	191-24-2	**0.0237**	0.00835	mg/kg	11.04.2019 19:25		5
Benzo(k)fluoranthene	207-08-9	**0.00974**	0.00835	mg/kg	11.04.2019 19:25		5
Chrysene	218-01-9	**0.0288**	0.00835	mg/kg	11.04.2019 19:25		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00835	mg/kg	11.04.2019 19:25	U	5
Fluoranthene	206-44-0	**0.0597**	0.00835	mg/kg	11.04.2019 19:25		5
Fluorene	86-73-7	BRL	0.00835	mg/kg	11.04.2019 19:25	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0189**	0.00835	mg/kg	11.04.2019 19:25		5
Naphthalene	91-20-3	BRL	0.0835	mg/kg	11.04.2019 19:25	U	5
Phenanthrene	85-01-8	**0.0395**	0.00835	mg/kg	11.04.2019 19:25		5
Pyrene	129-00-0	**0.0591**	0.00835	mg/kg	11.04.2019 19:25		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	72	%	31-130	11.04.2019 19:25	
2-Fluorobiphenyl	83	%	51-133	11.04.2019 19:25	
Terphenyl-D14	102	%	46-137	11.04.2019 19:25	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B11-1.0-1.5** Matrix: Soil Date Received:11.01.2019 09:30
Lab Sample Id: 641801-021 Date Collected: 10.30.2019 09:15 Sample Depth: 1.0 - 1.5

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.01.2019 14:00 Basis: Wet Weight
Seq Number: 3106209 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.650**	0.0583	mg/kg	11.01.2019 15:57		1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.04.2019 12:00 Basis: Dry Weight
Seq Number: 3106366 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0312**	0.0200	mg/kg	11.04.2019 15:03		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.04.2019 11:30 Basis: Wet Weight
Seq Number: 3106408 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.9**	1.89	mg/kg	11.04.2019 22:18		10
Barium	7440-39-3	**125**	3.77	mg/kg	11.04.2019 22:18		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.04.2019 22:18	U	10
Chromium	7440-47-3	**11.2**	3.77	mg/kg	11.04.2019 22:18		10
Lead	7439-92-1	**93.2**	1.89	mg/kg	11.04.2019 22:18		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.04.2019 22:18	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.04.2019 22:18	U	10

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Sample Id: **D-B11-1.0-1.5** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-021 Date Collected: 10.30.2019 09:15 Sample Depth: 1.0 - 1.5

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.04.2019 11:51		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**7.72**		SU	11.04.2019 12:44		1
Temperature	TEMP	**25.7**		Deg C	11.04.2019 12:44	+	1

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Sample Id: **D-B11-1.0-1.5**
Lab Sample Id: 641801-021

Matrix: Soil
Date Collected: 10.30.2019 09:15

Date Received:11.01.2019 09:30
Sample Depth: 1.0 - 1.5

Analytical Method: PCBs by SW 8082A
Tech: JOZ
Analyst: SHM
Seq Number: 3106445

Date Prep: 11.04.2019 11:15

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0333	mg/kg	11.05.2019 11:59	U	2
PCB-1221	11104-28-2	BRL	0.0333	mg/kg	11.05.2019 11:59	U	2
PCB-1232	11141-16-5	BRL	0.0333	mg/kg	11.05.2019 11:59	U	2
PCB-1242	53469-21-9	BRL	0.0333	mg/kg	11.05.2019 11:59	U	2
PCB-1248	12672-29-6	BRL	0.0333	mg/kg	11.05.2019 11:59	U	2
PCB-1254	11097-69-1	BRL	0.0333	mg/kg	11.05.2019 11:59	U	2
PCB-1260	11096-82-5	BRL	0.0333	mg/kg	11.05.2019 11:59	U	2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	235	%	39-125	11.05.2019 11:59	**
Tetrachloro-m-xylene	74	%	37-124	11.05.2019 11:59	

Certificate of Analytical Results 641801

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Sample Id:	**D-B11-1.0-1.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-021	Date Collected:	10.30.2019 09:15	Sample Depth:	1.0 - 1.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 08:09	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00833	mg/kg	11.04.2019 19:41	U	5
Acenaphthylene	208-96-8	**0.212**	0.00833	mg/kg	11.04.2019 19:41		5
Anthracene	120-12-7	**0.0609**	0.00833	mg/kg	11.04.2019 19:41		5
Benzo(a)anthracene	56-55-3	**0.232**	0.00833	mg/kg	11.04.2019 19:41		5
Benzo(a)pyrene	50-32-8	**0.390**	0.00833	mg/kg	11.04.2019 19:41		5
Benzo(b)fluoranthene	205-99-2	**0.575**	0.00833	mg/kg	11.04.2019 19:41		5
Benzo(g,h,i)perylene	191-24-2	**0.390**	0.00833	mg/kg	11.04.2019 19:41		5
Benzo(k)fluoranthene	207-08-9	**0.168**	0.00833	mg/kg	11.04.2019 19:41		5
Chrysene	218-01-9	**0.370**	0.00833	mg/kg	11.04.2019 19:41		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00833	mg/kg	11.04.2019 19:41	U	5
Fluoranthene	206-44-0	**0.759**	0.00833	mg/kg	11.04.2019 19:41		5
Fluorene	86-73-7	**0.0223**	0.00833	mg/kg	11.04.2019 19:41		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.317**	0.00833	mg/kg	11.04.2019 19:41		5
Naphthalene	91-20-3	BRL	0.0833	mg/kg	11.04.2019 19:41	U	5
Phenanthrene	85-01-8	**0.497**	0.00833	mg/kg	11.04.2019 19:41		5
Pyrene	129-00-0	**0.759**	0.00833	mg/kg	11.04.2019 19:41		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	82	%	31-130	11.04.2019 19:41	
2-Fluorobiphenyl	87	%	51-133	11.04.2019 19:41	
Terphenyl-D14	104	%	46-137	11.04.2019 19:41	

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Sample Id:	**D-B11-1.0-1.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-021	Date Collected:	10.30.2019 09:15	Sample Depth:	1.0 - 1.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,1-Dichloroethane	75-34-3	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,1-Dichloroethene	75-35-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,1-Dichloropropene	563-58-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2-Dibromoethane	106-93-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2-Dichloroethane	107-06-2	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,2-Dichloropropane	78-87-5	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,3-Dichloropropane	142-28-9	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
2,2-Dichloropropane	594-20-7	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
2-Butanone	78-93-3	BRL	1.05	mg/kg	11.01.2019 18:06	U	50
2-Chlorotoluene	95-49-8	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
2-Hexanone	591-78-6	BRL	2.63	mg/kg	11.01.2019 18:06	U	50
4-Chlorotoluene	106-43-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.63	mg/kg	11.01.2019 18:06	U	50
Acetone	67-64-1	BRL	5.26	mg/kg	11.01.2019 18:06	U	50
Benzene	71-43-2	BRL	0.0526	mg/kg	11.01.2019 18:06	U	50
Bromobenzene	108-86-1	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Bromochloromethane	74-97-5	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Bromodichloromethane	75-27-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Bromoform	75-25-2	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Bromomethane	74-83-9	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Carbon Disulfide	75-15-0	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Carbon Tetrachloride	56-23-5	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Chlorobenzene	108-90-7	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Chloroethane	75-00-3	BRL	0.526	mg/kg	11.01.2019 18:06	U	50
Chloroform	67-66-3	BRL	0.263	mg/kg	11.01.2019 18:06	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

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Sample Id:	**D-B11-1.0-1.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-021	Date Collected:	10.30.2019 09:15	Sample Depth:	1.0 - 1.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Dibromochloromethane	124-48-1	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Dibromomethane	74-95-3	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Ethylbenzene	100-41-4	BRL	0.0526	mg/kg	11.01.2019 18:06	U	50
Hexachlorobutadiene	87-68-3	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.05	mg/kg	11.01.2019 18:06	U	50
Isopropylbenzene	98-82-8	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
m,p-Xylenes	179601-23-1	BRL	0.105	mg/kg	11.01.2019 18:06	U	50
Methylene Chloride	75-09-2	BRL	1.05	mg/kg	11.01.2019 18:06	U	50
MTBE	1634-04-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Naphthalene	91-20-3	BRL	0.526	mg/kg	11.01.2019 18:06	U	50
n-Butylbenzene	104-51-8	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
n-Propylbenzene	103-65-1	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
o-Xylene	95-47-6	BRL	0.0526	mg/kg	11.01.2019 18:06	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Sec-Butylbenzene	135-98-8	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Styrene	100-42-5	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
tert-Butylbenzene	98-06-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Tetrachloroethylene	127-18-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Toluene	108-88-3	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Total Xylenes	1330-20-7	BRL	0.0526	mg/kg	11.01.2019 18:06	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Trichloroethene	79-01-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Trichlorofluoromethane	75-69-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Vinyl Acetate	108-05-4	BRL	0.526	mg/kg	11.01.2019 18:06	U	50
Vinyl Chloride	75-01-4	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
1,3-Butadiene	106-99-0	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Cyclohexane	110-82-7	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Dicyclopentadiene	77-73-6	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Methylcyclohexane	108-87-2	BRL	0.526	mg/kg	11.01.2019 18:06	U	50
n-Hexane	110-54-3	BRL	0.526	mg/kg	11.01.2019 18:06	U	50
4-Ethyltoluene	622-96-8	BRL	0.263	mg/kg	11.01.2019 18:06	U	50
Propene	115-07-1	BRL	0.263	mg/kg	11.01.2019 18:06	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

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Sample Id: **D-B11-1.0-1.5**
Lab Sample Id: 641801-021

Matrix: Soil
Date Collected: 10.30.2019 09:15

Date Received:11.01.2019 09:30
Sample Depth: 1.0 - 1.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	88	%	53-142	11.01.2019 18:06	
1,2-Dichloroethane-D4	99	%	56-150	11.01.2019 18:06	
Toluene-D8	104	%	70-130	11.01.2019 18:06	
4-Bromofluorobenzene	97	%	68-152	11.01.2019 18:06	

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Sample Id: **D-B11-2.5-3.0**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-022
Date Collected: 10.30.2019 09:30
Sample Depth: 2.5 - 3.0

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 12:00
Basis: Dry Weight
Seq Number: 3106366
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0478**	0.0172	mg/kg	11.04.2019 15:05		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**18.9**	1.85	mg/kg	11.04.2019 22:21		10
Barium	7440-39-3	**83.3**	3.70	mg/kg	11.04.2019 22:21		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.04.2019 22:21	U	10
Chromium	7440-47-3	**16.1**	3.70	mg/kg	11.04.2019 22:21		10
Lead	7439-92-1	**420**	1.85	mg/kg	11.04.2019 22:21		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.04.2019 22:21	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.04.2019 22:21	U	10

Certificate of Analytical Results 641801

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Sample Id:	**D-B11-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-022	Date Collected:	10.30.2019 09:30	Sample Depth:	2.5 - 3.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.04.2019 08:12	Basis:	Wet Weight
Seq Number:	3106384			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0266**	0.0167	mg/kg	11.04.2019 19:58		10
Acenaphthylene	208-96-8	**1.14**	0.0167	mg/kg	11.04.2019 19:58		10
Anthracene	120-12-7	**0.275**	0.0167	mg/kg	11.04.2019 19:58		10
Benzo(a)anthracene	56-55-3	**1.10**	0.0167	mg/kg	11.04.2019 19:58		10
Benzo(a)pyrene	50-32-8	**1.66**	0.0167	mg/kg	11.04.2019 19:58		10
Benzo(b)fluoranthene	205-99-2	**2.90**	0.0167	mg/kg	11.04.2019 19:58		10
Benzo(g,h,i)perylene	191-24-2	**1.59**	0.0167	mg/kg	11.04.2019 19:58		10
Benzo(k)fluoranthene	207-08-9	**0.729**	0.0167	mg/kg	11.04.2019 19:58		10
Chrysene	218-01-9	**1.79**	0.0167	mg/kg	11.04.2019 19:58		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.04.2019 19:58	U	10
Fluoranthene	206-44-0	**3.32**	0.0334	mg/kg	11.05.2019 11:30	D	20
Fluorene	86-73-7	**0.127**	0.0167	mg/kg	11.04.2019 19:58		10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.37**	0.0167	mg/kg	11.04.2019 19:58		10
Naphthalene	91-20-3	**0.421**	0.167	mg/kg	11.04.2019 19:58		10
Phenanthrene	85-01-8	**2.41**	0.0167	mg/kg	11.04.2019 19:58		10
Pyrene	129-00-0	**3.20**	0.0167	mg/kg	11.04.2019 19:58		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	99	%	31-130	11.04.2019 19:58	
2-Fluorobiphenyl	96	%	51-133	11.04.2019 19:58	
Terphenyl-D14	117	%	46-137	11.04.2019 19:58	

APS, Phoenix, AZ

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Sample Id:	**D-B11-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-022	Date Collected:	10.30.2019 09:30	Sample Depth:	2.5 - 3.0
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,1-Dichloroethane	75-34-3	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,1-Dichloroethene	75-35-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,1-Dichloropropene	563-58-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2-Dibromoethane	106-93-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2-Dichloroethane	107-06-2	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,2-Dichloropropane	78-87-5	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,3-Dichloropropane	142-28-9	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
2,2-Dichloropropane	594-20-7	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
2-Butanone	78-93-3	BRL	1.06	mg/kg	11.01.2019 18:28	U	50
2-Chlorotoluene	95-49-8	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
2-Hexanone	591-78-6	BRL	2.65	mg/kg	11.01.2019 18:28	U	50
4-Chlorotoluene	106-43-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.65	mg/kg	11.01.2019 18:28	U	50
Acetone	67-64-1	BRL	5.31	mg/kg	11.01.2019 18:28	U	50
Benzene	71-43-2	BRL	0.0531	mg/kg	11.01.2019 18:28	U	50
Bromobenzene	108-86-1	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Bromochloromethane	74-97-5	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Bromodichloromethane	75-27-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Bromoform	75-25-2	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Bromomethane	74-83-9	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Carbon Disulfide	75-15-0	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Carbon Tetrachloride	56-23-5	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Chlorobenzene	108-90-7	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Chloroethane	75-00-3	BRL	0.531	mg/kg	11.01.2019 18:28	U	50
Chloroform	67-66-3	BRL	0.265	mg/kg	11.01.2019 18:28	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B11-2.5-3.0**	Matrix: Soil	Date Received:11.01.2019 09:30	
Lab Sample Id: 641801-022	Date Collected: 10.30.2019 09:30	Sample Depth: 2.5 - 3.0	
Analytical Method: Volatiles by SW 8260C		Prep Method: SW5035A	
Tech: SAD		% Moisture:	
Analyst: SAD	Date Prep: 11.01.2019 15:00	Basis: Wet Weight	
Seq Number: 3106167		SUB: T104704215-19-30	

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Dibromochloromethane	124-48-1	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Dibromomethane	74-95-3	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Ethylbenzene	100-41-4	BRL	0.0531	mg/kg	11.01.2019 18:28	U	50
Hexachlorobutadiene	87-68-3	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.06	mg/kg	11.01.2019 18:28	U	50
Isopropylbenzene	98-82-8	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
m,p-Xylenes	179601-23-1	BRL	0.106	mg/kg	11.01.2019 18:28	U	50
Methylene Chloride	75-09-2	BRL	1.06	mg/kg	11.01.2019 18:28	U	50
MTBE	1634-04-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Naphthalene	91-20-3	BRL	0.531	mg/kg	11.01.2019 18:28	U	50
n-Butylbenzene	104-51-8	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
n-Propylbenzene	103-65-1	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
o-Xylene	95-47-6	BRL	0.0531	mg/kg	11.01.2019 18:28	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Sec-Butylbenzene	135-98-8	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Styrene	100-42-5	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
tert-Butylbenzene	98-06-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Tetrachloroethylene	127-18-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Toluene	108-88-3	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Total Xylenes	1330-20-7	BRL	0.0531	mg/kg	11.01.2019 18:28	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Trichloroethene	79-01-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Trichlorofluoromethane	75-69-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Vinyl Acetate	108-05-4	BRL	0.531	mg/kg	11.01.2019 18:28	U	50
Vinyl Chloride	75-01-4	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
1,3-Butadiene	106-99-0	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Cyclohexane	110-82-7	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Dicyclopentadiene	77-73-6	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Methylcyclohexane	108-87-2	BRL	0.531	mg/kg	11.01.2019 18:28	U	50
n-Hexane	110-54-3	BRL	0.531	mg/kg	11.01.2019 18:28	U	50
4-Ethyltoluene	622-96-8	BRL	0.265	mg/kg	11.01.2019 18:28	U	50
Propene	115-07-1	BRL	0.265	mg/kg	11.01.2019 18:28	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B11-2.5-3.0**
Lab Sample Id: 641801-022

Matrix: Soil
Date Collected: 10.30.2019 09:30

Date Received:11.01.2019 09:30
Sample Depth: 2.5 - 3.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	90	%	53-142	11.01.2019 18:28	
1,2-Dichloroethane-D4	100	%	56-150	11.01.2019 18:28	
Toluene-D8	104	%	70-130	11.01.2019 18:28	
4-Bromofluorobenzene	94	%	68-152	11.01.2019 18:28	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B11-2.5-3.0** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-022 Date Collected: 10.30.2019 09:30 Sample Depth: 2.5 - 3.0

Analytical Method: TCLP Mercury by SW 1311/7470A Prep Method: SW7470P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.19.2019 10:10

Seq Number: 3107924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.000200	mg/L	11.19.2019 13:54	U	1

Analytical Method: TCLP Metal by SW 1311/6010C Prep Method: SW3010A

Tech: MLI % Moisture:

Analyst: DEP Date Prep: 11.19.2019 09:50

Seq Number: 3107971 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	BRL	0.100	mg/L	11.19.2019 15:14	U	1
Barium	7440-39-3	**0.594**	0.0500	mg/L	11.19.2019 15:14		1
Cadmium	7440-43-9	BRL	0.0500	mg/L	11.19.2019 15:14	U	1
Chromium	7440-47-3	BRL	0.0500	mg/L	11.19.2019 15:14	U	1
Lead	7439-92-1	**0.128**	0.0750	mg/L	11.19.2019 15:14		1
Selenium	7782-49-2	**0.456**	0.150	mg/L	11.19.2019 15:14		1
Silver	7440-22-4	BRL	0.150	mg/L	11.19.2019 15:14	U	1

Certificate of Analytical Results 641801

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Sample Id: **D-B11-5.0-5.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-023
Date Collected: 10.30.2019 09:45
Sample Depth: 5.0 - 5.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 12:00
Basis: Dry Weight
Seq Number: 3106366
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	11.04.2019 15:07	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**19.5**	2.00	mg/kg	11.04.2019 22:24		10
Barium	7440-39-3	**300**	4.00	mg/kg	11.04.2019 22:24		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.04.2019 22:24	U	10
Chromium	7440-47-3	**17.8**	4.00	mg/kg	11.04.2019 22:24		10
Lead	7439-92-1	**141**	2.00	mg/kg	11.04.2019 22:24		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.04.2019 22:24	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.04.2019 22:24	U	10

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Sample Id:	**D-B11-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-023	Date Collected:	10.30.2019 09:45	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:09	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	11.01.2019 18:55	U	10
Acenaphthylene	208-96-8	**0.189**	0.0167	mg/kg	11.01.2019 18:55		10
Anthracene	120-12-7	**0.0337**	0.0167	mg/kg	11.01.2019 18:55		10
Benzo(a)anthracene	56-55-3	**0.132**	0.0167	mg/kg	11.01.2019 18:55		10
Benzo(a)pyrene	50-32-8	**0.215**	0.0167	mg/kg	11.01.2019 18:55		10
Benzo(b)fluoranthene	205-99-2	**0.388**	0.0167	mg/kg	11.01.2019 18:55		10
Benzo(g,h,i)perylene	191-24-2	**0.303**	0.0167	mg/kg	11.01.2019 18:55		10
Benzo(k)fluoranthene	207-08-9	**0.0912**	0.0167	mg/kg	11.01.2019 18:55		10
Chrysene	218-01-9	**0.230**	0.0167	mg/kg	11.01.2019 18:55		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.01.2019 18:55	U	10
Fluoranthene	206-44-0	**0.435**	0.0167	mg/kg	11.01.2019 18:55		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	11.01.2019 18:55	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.234**	0.0167	mg/kg	11.01.2019 18:55		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	11.01.2019 18:55	U	10
Phenanthrene	85-01-8	**0.261**	0.0167	mg/kg	11.01.2019 18:55		10
Pyrene	129-00-0	**0.436**	0.0167	mg/kg	11.01.2019 18:55		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	86	%	31-130	11.01.2019 18:55	
2-Fluorobiphenyl	90	%	51-133	11.01.2019 18:55	
Terphenyl-D14	98	%	46-137	11.01.2019 18:55	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B11-7.5-8.0** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-024 Date Collected: 10.30.2019 09:50 Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture: 0

Analyst: ANJ Date Prep: 11.04.2019 12:00 Basis: Dry Weight

Seq Number: 3106366 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0216**	0.0172	mg/kg	11.04.2019 15:09		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.04.2019 11:30 Basis: Wet Weight

Seq Number: 3106408 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.7**	1.69	mg/kg	11.04.2019 22:27		10
Barium	7440-39-3	**225**	3.39	mg/kg	11.04.2019 22:27		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.04.2019 22:27	U	10
Chromium	7440-47-3	**19.7**	3.39	mg/kg	11.04.2019 22:27		10
Lead	7439-92-1	**158**	1.69	mg/kg	11.04.2019 22:27		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.04.2019 22:27	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.04.2019 22:27	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B11-7.5-8.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-024	Date Collected:	10.30.2019 09:50	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:12	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00834	mg/kg	11.01.2019 19:12	U	5
Acenaphthylene	208-96-8	**0.202**	0.00834	mg/kg	11.01.2019 19:12		5
Anthracene	120-12-7	**0.0472**	0.00834	mg/kg	11.01.2019 19:12		5
Benzo(a)anthracene	56-55-3	**0.175**	0.00834	mg/kg	11.01.2019 19:12		5
Benzo(a)pyrene	50-32-8	**0.280**	0.00834	mg/kg	11.01.2019 19:12		5
Benzo(b)fluoranthene	205-99-2	**0.465**	0.00834	mg/kg	11.01.2019 19:12		5
Benzo(g,h,i)perylene	191-24-2	**0.309**	0.00834	mg/kg	11.01.2019 19:12		5
Benzo(k)fluoranthene	207-08-9	**0.103**	0.00834	mg/kg	11.01.2019 19:12		5
Chrysene	218-01-9	**0.302**	0.00834	mg/kg	11.01.2019 19:12		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00834	mg/kg	11.01.2019 19:12	U	5
Fluoranthene	206-44-0	**0.625**	0.00834	mg/kg	11.01.2019 19:12		5
Fluorene	86-73-7	**0.0232**	0.00834	mg/kg	11.01.2019 19:12		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.252**	0.00834	mg/kg	11.01.2019 19:12		5
Naphthalene	91-20-3	BRL	0.0834	mg/kg	11.01.2019 19:12	U	5
Phenanthrene	85-01-8	**0.446**	0.00834	mg/kg	11.01.2019 19:12		5
Pyrene	129-00-0	**0.606**	0.00834	mg/kg	11.01.2019 19:12		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	94	%	31-130	11.01.2019 19:12	
2-Fluorobiphenyl	96	%	51-133	11.01.2019 19:12	
Terphenyl-D14	98	%	46-137	11.01.2019 19:12	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B11-10.0-10.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-025
Date Collected: 10.30.2019 09:55
Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 12:00
Basis: Dry Weight
Seq Number: 3106366
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	11.04.2019 15:11	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**23.5**	1.79	mg/kg	11.04.2019 22:30		10
Barium	7440-39-3	**126**	3.57	mg/kg	11.04.2019 22:30		10
Cadmium	7440-43-9	BRL	1.79	mg/kg	11.04.2019 22:30	U	10
Chromium	7440-47-3	**30.2**	3.57	mg/kg	11.04.2019 22:30		10
Lead	7439-92-1	**63.7**	1.79	mg/kg	11.04.2019 22:30		10
Selenium	7782-49-2	BRL	1.79	mg/kg	11.04.2019 22:30	U	10
Silver	7440-22-4	BRL	1.79	mg/kg	11.04.2019 22:30	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B11-10.0-10.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-025	Date Collected:	10.30.2019 09:55	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:15	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00832	mg/kg	11.01.2019 19:29	U	5
Acenaphthylene	208-96-8	**0.104**	0.00832	mg/kg	11.01.2019 19:29		5
Anthracene	120-12-7	**0.0270**	0.00832	mg/kg	11.01.2019 19:29		5
Benzo(a)anthracene	56-55-3	**0.105**	0.00832	mg/kg	11.01.2019 19:29		5
Benzo(a)pyrene	50-32-8	**0.161**	0.00832	mg/kg	11.01.2019 19:29		5
Benzo(b)fluoranthene	205-99-2	**0.258**	0.00832	mg/kg	11.01.2019 19:29		5
Benzo(g,h,i)perylene	191-24-2	**0.174**	0.00832	mg/kg	11.01.2019 19:29		5
Benzo(k)fluoranthene	207-08-9	**0.0642**	0.00832	mg/kg	11.01.2019 19:29		5
Chrysene	218-01-9	**0.167**	0.00832	mg/kg	11.01.2019 19:29		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00832	mg/kg	11.01.2019 19:29	U	5
Fluoranthene	206-44-0	**0.347**	0.00832	mg/kg	11.01.2019 19:29		5
Fluorene	86-73-7	**0.0135**	0.00832	mg/kg	11.01.2019 19:29		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.142**	0.00832	mg/kg	11.01.2019 19:29		5
Naphthalene	91-20-3	BRL	0.0832	mg/kg	11.01.2019 19:29	U	5
Phenanthrene	85-01-8	**0.242**	0.00832	mg/kg	11.01.2019 19:29		5
Pyrene	129-00-0	**0.344**	0.00832	mg/kg	11.01.2019 19:29		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	94	%	31-130	11.01.2019 19:29	
2-Fluorobiphenyl	100	%	51-133	11.01.2019 19:29	
Terphenyl-D14	109	%	46-137	11.01.2019 19:29	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B20-2.5-3.0**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-026
Date Collected: 10.30.2019 10:00
Sample Depth: 2.5 - 3.0

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 12:00
Basis: Dry Weight
Seq Number: 3106366
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0707**	0.0185	mg/kg	11.04.2019 14:50		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 15:15
Basis: Wet Weight
Seq Number: 3106405
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.7**	1.72	mg/kg	11.05.2019 00:00		10
Barium	7440-39-3	**180**	3.45	mg/kg	11.05.2019 00:00		10
Cadmium	7440-43-9	**2.20**	1.72	mg/kg	11.05.2019 00:00		10
Chromium	7440-47-3	**13.1**	3.45	mg/kg	11.05.2019 00:00		10
Lead	7439-92-1	**107**	1.72	mg/kg	11.05.2019 00:00		10
Selenium	7782-49-2	BRL	1.72	mg/kg	11.05.2019 00:00	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	11.05.2019 00:00	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B20-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-026	Date Collected:	10.30.2019 10:00	Sample Depth:	2.5 - 3.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:18	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	11.01.2019 19:45	U	10
Acenaphthylene	208-96-8	BRL	0.0167	mg/kg	11.01.2019 19:45	U	10
Anthracene	120-12-7	BRL	0.0167	mg/kg	11.01.2019 19:45	U	10
Benzo(a)anthracene	56-55-3	**0.0502**	0.0167	mg/kg	11.01.2019 19:45		10
Benzo(a)pyrene	50-32-8	**0.0716**	0.0167	mg/kg	11.01.2019 19:45		10
Benzo(b)fluoranthene	205-99-2	**0.0991**	0.0167	mg/kg	11.01.2019 19:45		10
Benzo(g,h,i)perylene	191-24-2	**0.0538**	0.0167	mg/kg	11.01.2019 19:45		10
Benzo(k)fluoranthene	207-08-9	**0.0371**	0.0167	mg/kg	11.01.2019 19:45		10
Chrysene	218-01-9	**0.0711**	0.0167	mg/kg	11.01.2019 19:45		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.01.2019 19:45	U	10
Fluoranthene	206-44-0	**0.119**	0.0167	mg/kg	11.01.2019 19:45		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	11.01.2019 19:45	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0454**	0.0167	mg/kg	11.01.2019 19:45		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	11.01.2019 19:45	U	10
Phenanthrene	85-01-8	**0.0505**	0.0167	mg/kg	11.01.2019 19:45		10
Pyrene	129-00-0	**0.111**	0.0167	mg/kg	11.01.2019 19:45		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	117	%	31-130	11.01.2019 19:45	
2-Fluorobiphenyl	122	%	51-133	11.01.2019 19:45	
Terphenyl-D14	130	%	46-137	11.01.2019 19:45	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B11-15.0-15.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-027
Date Collected: 10.30.2019 10:05
Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 12:00
Basis: Dry Weight
Seq Number: 3106366
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.04.2019 15:24	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.1**	1.82	mg/kg	11.04.2019 22:33		10
Barium	7440-39-3	**120**	3.64	mg/kg	11.04.2019 22:33		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.04.2019 22:33	U	10
Chromium	7440-47-3	**8.53**	3.64	mg/kg	11.04.2019 22:33		10
Lead	7439-92-1	**17.8**	1.82	mg/kg	11.04.2019 22:33		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.04.2019 22:33	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.04.2019 22:33	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B11-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-027	Date Collected:	10.30.2019 10:05	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:21	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.01.2019 20:36	U	1
Acenaphthylene	208-96-8	**0.0106**	0.00166	mg/kg	11.01.2019 20:36		1
Anthracene	120-12-7	**0.00256**	0.00166	mg/kg	11.01.2019 20:36		1
Benzo(a)anthracene	56-55-3	**0.00820**	0.00166	mg/kg	11.01.2019 20:36		1
Benzo(a)pyrene	50-32-8	**0.0126**	0.00166	mg/kg	11.01.2019 20:36		1
Benzo(b)fluoranthene	205-99-2	**0.0192**	0.00166	mg/kg	11.01.2019 20:36		1
Benzo(g,h,i)perylene	191-24-2	**0.0129**	0.00166	mg/kg	11.01.2019 20:36		1
Benzo(k)fluoranthene	207-08-9	**0.00639**	0.00166	mg/kg	11.01.2019 20:36		1
Chrysene	218-01-9	**0.0120**	0.00166	mg/kg	11.01.2019 20:36		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.01.2019 20:36	U	1
Fluoranthene	206-44-0	**0.0273**	0.00166	mg/kg	11.01.2019 20:36		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.01.2019 20:36	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0105**	0.00166	mg/kg	11.01.2019 20:36		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.01.2019 20:36	U	1
Phenanthrene	85-01-8	**0.0217**	0.00166	mg/kg	11.01.2019 20:36		1
Pyrene	129-00-0	**0.0284**	0.00166	mg/kg	11.01.2019 20:36		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	107	%	31-130	11.01.2019 20:36	
2-Fluorobiphenyl	108	%	51-133	11.01.2019 20:36	
Terphenyl-D14	113	%	46-137	11.01.2019 20:36	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B11-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-028	Date Collected:	10.30.2019 10:20	Sample Depth:	19.5 - 20.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.04.2019 15:12	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 11:30	Basis:	Wet Weight
Seq Number:	3106408			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.4**	1.96	mg/kg	11.04.2019 22:36		10
Barium	7440-39-3	**76.4**	3.92	mg/kg	11.04.2019 22:36		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.04.2019 22:36	U	10
Chromium	7440-47-3	**11.8**	3.92	mg/kg	11.04.2019 22:36		10
Lead	7439-92-1	**16.4**	1.96	mg/kg	11.04.2019 22:36		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.04.2019 22:36	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.04.2019 22:36	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B11-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-028	Date Collected:	10.30.2019 10:20	Sample Depth:	19.5 - 20.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:24	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.01.2019 20:52	U	1
Acenaphthylene	208-96-8	**0.0104**	0.00167	mg/kg	11.01.2019 20:52		1
Anthracene	120-12-7	**0.00327**	0.00167	mg/kg	11.01.2019 20:52		1
Benzo(a)anthracene	56-55-3	**0.00982**	0.00167	mg/kg	11.01.2019 20:52		1
Benzo(a)pyrene	50-32-8	**0.0154**	0.00167	mg/kg	11.01.2019 20:52		1
Benzo(b)fluoranthene	205-99-2	**0.0205**	0.00167	mg/kg	11.01.2019 20:52		1
Benzo(g,h,i)perylene	191-24-2	**0.0141**	0.00167	mg/kg	11.01.2019 20:52		1
Benzo(k)fluoranthene	207-08-9	**0.00677**	0.00167	mg/kg	11.01.2019 20:52		1
Chrysene	218-01-9	**0.0134**	0.00167	mg/kg	11.01.2019 20:52		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.01.2019 20:52	U	1
Fluoranthene	206-44-0	**0.0343**	0.00167	mg/kg	11.01.2019 20:52		1
Fluorene	86-73-7	**0.00231**	0.00167	mg/kg	11.01.2019 20:52		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0114**	0.00167	mg/kg	11.01.2019 20:52		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.01.2019 20:52	U	1
Phenanthrene	85-01-8	**0.0288**	0.00167	mg/kg	11.01.2019 20:52		1
Pyrene	129-00-0	**0.0378**	0.00167	mg/kg	11.01.2019 20:52		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	105	%	31-130	11.01.2019 20:52	
2-Fluorobiphenyl	106	%	51-133	11.01.2019 20:52	
Terphenyl-D14	115	%	46-137	11.01.2019 20:52	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B20-5.0-5.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-029
Date Collected: 10.30.2019 10:35
Sample Depth: 5.0 - 5.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 12:00
Basis: Dry Weight
Seq Number: 3106366
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0811**	0.0172	mg/kg	11.04.2019 15:14		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 11:30
Basis: Wet Weight
Seq Number: 3106408
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.0**	1.79	mg/kg	11.04.2019 22:39		10
Barium	7440-39-3	**96.3**	3.57	mg/kg	11.04.2019 22:39		10
Cadmium	7440-43-9	BRL	1.79	mg/kg	11.04.2019 22:39	U	10
Chromium	7440-47-3	**12.4**	3.57	mg/kg	11.04.2019 22:39		10
Lead	7439-92-1	**112**	1.79	mg/kg	11.04.2019 22:39		10
Selenium	7782-49-2	BRL	1.79	mg/kg	11.04.2019 22:39	U	10
Silver	7440-22-4	BRL	1.79	mg/kg	11.04.2019 22:39	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B20-5.0-5.5**
Lab Sample Id: 641801-029

Matrix: Soil
Date Collected: 10.30.2019 10:35

Date Received:11.01.2019 09:30
Sample Depth: 5.0 - 5.5

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106302

Date Prep: 11.01.2019 16:27

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00833	mg/kg	11.04.2019 11:39	U	5
Acenaphthylene	208-96-8	**0.142**	0.00833	mg/kg	11.04.2019 11:39		5
Anthracene	120-12-7	**0.0822**	0.00833	mg/kg	11.04.2019 11:39		5
Benzo(a)anthracene	56-55-3	**0.660**	0.00833	mg/kg	11.04.2019 11:39		5
Benzo(a)pyrene	50-32-8	**1.34**	0.00833	mg/kg	11.04.2019 11:39		5
Benzo(b)fluoranthene	205-99-2	**1.34**	0.00833	mg/kg	11.04.2019 11:39		5
Benzo(g,h,i)perylene	191-24-2	**1.57**	0.00833	mg/kg	11.04.2019 11:39		5
Benzo(k)fluoranthene	207-08-9	**0.398**	0.00833	mg/kg	11.04.2019 11:39		5
Chrysene	218-01-9	**0.833**	0.00833	mg/kg	11.04.2019 11:39		5
Dibenz(a,h)Anthracene	53-70-3	**0.175**	0.00833	mg/kg	11.04.2019 11:39		5
Fluoranthene	206-44-0	**1.62**	0.00833	mg/kg	11.04.2019 11:39		5
Fluorene	86-73-7	**0.0148**	0.00833	mg/kg	11.04.2019 11:39		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.08**	0.00833	mg/kg	11.04.2019 11:39		5
Naphthalene	91-20-3	BRL	0.0833	mg/kg	11.04.2019 11:39	U	5
Phenanthrene	85-01-8	**0.559**	0.00833	mg/kg	11.04.2019 11:39		5
Pyrene	129-00-0	**2.20**	0.0167	mg/kg	11.04.2019 15:32	D	10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	85	%	31-130	11.04.2019 11:39	
2-Fluorobiphenyl	92	%	51-133	11.04.2019 11:39	
Terphenyl-D14	112	%	46-137	11.04.2019 11:39	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B17-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-030	Date Collected:	10.30.2019 10:50	Sample Depth:	2.5 - 3.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0282**	0.0189	mg/kg	11.04.2019 15:20		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.6**	1.72	mg/kg	11.05.2019 00:21		10
Barium	7440-39-3	**86.3**	3.45	mg/kg	11.05.2019 00:21		10
Cadmium	7440-43-9	BRL	1.72	mg/kg	11.05.2019 00:21	U	10
Chromium	7440-47-3	**10.1**	3.45	mg/kg	11.05.2019 00:21		10
Lead	7439-92-1	**43.6**	1.72	mg/kg	11.05.2019 00:21		10
Selenium	7782-49-2	BRL	1.72	mg/kg	11.05.2019 00:21	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	11.05.2019 00:21	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B17-2.5-3.0**
Lab Sample Id: 641801-030

Matrix: Soil
Date Collected: 10.30.2019 10:50

Date Received:11.01.2019 09:30
Sample Depth: 2.5 - 3.0

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106302

Date Prep: 11.01.2019 16:30

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0413**	0.0167	mg/kg	11.04.2019 11:56		10
Acenaphthylene	208-96-8	**0.808**	0.0167	mg/kg	11.04.2019 11:56		10
Anthracene	120-12-7	**0.610**	0.0167	mg/kg	11.04.2019 11:56		10
Benzo(a)anthracene	56-55-3	**2.71**	0.0167	mg/kg	11.04.2019 11:56		10
Benzo(a)pyrene	50-32-8	**5.31**	0.167	mg/kg	11.04.2019 16:55	D	100
Benzo(b)fluoranthene	205-99-2	**4.89**	0.167	mg/kg	11.04.2019 16:55	D	100
Benzo(g,h,i)perylene	191-24-2	**6.71**	0.167	mg/kg	11.04.2019 16:55	D	100
Benzo(k)fluoranthene	207-08-9	**1.37**	0.0167	mg/kg	11.04.2019 11:56		10
Chrysene	218-01-9	**3.29**	0.0167	mg/kg	11.04.2019 11:56		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.04.2019 11:56	U	10
Fluoranthene	206-44-0	**8.61**	0.167	mg/kg	11.04.2019 16:55	D	100
Fluorene	86-73-7	**0.210**	0.0167	mg/kg	11.04.2019 11:56		10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**4.31**	0.167	mg/kg	11.04.2019 16:55	D	100
Naphthalene	91-20-3	**0.405**	0.167	mg/kg	11.04.2019 11:56		10
Phenanthrene	85-01-8	**4.56**	0.167	mg/kg	11.04.2019 16:55	D	100
Pyrene	129-00-0	**10.6**	0.167	mg/kg	11.04.2019 16:55	D	100

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	80	%	31-130	11.04.2019 11:56	
2-Fluorobiphenyl	84	%	51-133	11.04.2019 11:56	
Terphenyl-D14	113	%	46-137	11.04.2019 11:56	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B17-5.0-5.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-031
Date Collected: 10.30.2019 10:55
Sample Depth: 5.0 - 5.5

Analytical Method: Total Cyanide by SW 9012
Prep Method: E335.4P
Tech: KCS
% Moisture:
Analyst: KCS
Date Prep: 11.01.2019 14:00
Basis: Wet Weight
Seq Number: 3106209
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.204**	0.0588	mg/kg	11.01.2019 15:59		1

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 12:00
Basis: Dry Weight
Seq Number: 3106366
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0475**	0.0192	mg/kg	11.04.2019 15:22		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 15:15
Basis: Wet Weight
Seq Number: 3106405
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.44**	1.96	mg/kg	11.05.2019 00:24		10
Barium	7440-39-3	**86.1**	3.92	mg/kg	11.05.2019 00:24		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.05.2019 00:24	U	10
Chromium	7440-47-3	**5.51**	3.92	mg/kg	11.05.2019 00:24		10
Lead	7439-92-1	**20.3**	1.96	mg/kg	11.05.2019 00:24		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.05.2019 00:24	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.05.2019 00:24	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B17-5.0-5.5** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-031 Date Collected: 10.30.2019 10:55 Sample Depth: 5.0 - 5.5

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.04.2019 12:10		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.48**		SU	11.04.2019 12:44		1
Temperature	TEMP	**25.8**		Deg C	11.04.2019 12:44	+	1

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APS, Phoenix, AZ

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Sample Id:	**D-B17-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-031	Date Collected:	10.30.2019 10:55	Sample Depth:	5.0 - 5.5
Analytical Method:	PCBs by SW 8082A			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	SHM	Date Prep:	11.04.2019 11:18	Basis:	Wet Weight
Seq Number:	3106445			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0833	mg/kg	11.05.2019 12:10	U	5
PCB-1221	11104-28-2	BRL	0.0833	mg/kg	11.05.2019 12:10	U	5
PCB-1232	11141-16-5	BRL	0.0833	mg/kg	11.05.2019 12:10	U	5
PCB-1242	53469-21-9	BRL	0.0833	mg/kg	11.05.2019 12:10	U	5
PCB-1248	12672-29-6	BRL	0.0833	mg/kg	11.05.2019 12:10	U	5
PCB-1254	11097-69-1	BRL	0.0833	mg/kg	11.05.2019 12:10	U	5
PCB-1260	11096-82-5	BRL	0.0833	mg/kg	11.05.2019 12:10	U	5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	123	%	39-125	11.05.2019 12:10	
Tetrachloro-m-xylene	67	%	37-124	11.05.2019 12:10	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B17-5.0-5.5**
Lab Sample Id: 641801-031

Matrix: Soil
Date Collected: 10.30.2019 10:55

Date Received:11.01.2019 09:30
Sample Depth: 5.0 - 5.5

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 08:42

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0668	mg/kg	11.05.2019 12:36	U	20
Acenaphthylene	208-96-8	**0.414**	0.0668	mg/kg	11.05.2019 12:36		20
Anthracene	120-12-7	**0.0833**	0.0668	mg/kg	11.05.2019 12:36		20
Benzo(a)anthracene	56-55-3	**0.295**	0.0668	mg/kg	11.05.2019 12:36		20
Benzo(a)pyrene	50-32-8	**0.544**	0.0668	mg/kg	11.05.2019 12:36		20
Benzo(b)fluoranthene	205-99-2	**0.576**	0.0668	mg/kg	11.05.2019 12:36		20
Benzo(g,h,i)perylene	191-24-2	**0.636**	0.0668	mg/kg	11.05.2019 12:36		20
Benzo(k)fluoranthene	207-08-9	**0.177**	0.0668	mg/kg	11.05.2019 12:36		20
Chrysene	218-01-9	**0.351**	0.0668	mg/kg	11.05.2019 12:36		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0668	mg/kg	11.05.2019 12:36	U	20
Fluoranthene	206-44-0	**1.09**	0.0668	mg/kg	11.05.2019 12:36		20
Fluorene	86-73-7	BRL	0.0668	mg/kg	11.05.2019 12:36	U	20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.451**	0.0668	mg/kg	11.05.2019 12:36		20
Naphthalene	91-20-3	BRL	0.668	mg/kg	11.05.2019 12:36	U	20
Phenanthrene	85-01-8	**0.808**	0.0668	mg/kg	11.05.2019 12:36		20
Pyrene	129-00-0	**1.32**	0.0668	mg/kg	11.05.2019 12:36		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	81	%	31-130	11.05.2019 12:36	
2-Fluorobiphenyl	70	%	51-133	11.05.2019 12:36	
Terphenyl-D14	73	%	46-137	11.05.2019 12:36	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B17-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-031	Date Collected:	10.30.2019 10:55	Sample Depth:	5.0 - 5.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,1-Dichloroethane	75-34-3	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,1-Dichloroethene	75-35-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,1-Dichloropropene	563-58-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2-Dibromoethane	106-93-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2-Dichloroethane	107-06-2	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,2-Dichloropropane	78-87-5	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,3-Dichloropropane	142-28-9	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
2,2-Dichloropropane	594-20-7	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
2-Butanone	78-93-3	BRL	1.08	mg/kg	11.01.2019 18:49	U	50
2-Chlorotoluene	95-49-8	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
2-Hexanone	591-78-6	BRL	2.70	mg/kg	11.01.2019 18:49	U	50
4-Chlorotoluene	106-43-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.70	mg/kg	11.01.2019 18:49	U	50
Acetone	67-64-1	BRL	5.40	mg/kg	11.01.2019 18:49	U	50
Benzene	71-43-2	BRL	0.0540	mg/kg	11.01.2019 18:49	U	50
Bromobenzene	108-86-1	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Bromochloromethane	74-97-5	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Bromodichloromethane	75-27-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Bromoform	75-25-2	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Bromomethane	74-83-9	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Carbon Disulfide	75-15-0	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Carbon Tetrachloride	56-23-5	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Chlorobenzene	108-90-7	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Chloroethane	75-00-3	BRL	0.540	mg/kg	11.01.2019 18:49	U	50
Chloroform	67-66-3	BRL	0.270	mg/kg	11.01.2019 18:49	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B17-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-031	Date Collected:	10.30.2019 10:55	Sample Depth:	5.0 - 5.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Dibromochloromethane	124-48-1	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Dibromomethane	74-95-3	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Ethylbenzene	100-41-4	BRL	0.0540	mg/kg	11.01.2019 18:49	U	50
Hexachlorobutadiene	87-68-3	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.08	mg/kg	11.01.2019 18:49	U	50
Isopropylbenzene	98-82-8	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
m,p-Xylenes	179601-23-1	BRL	0.108	mg/kg	11.01.2019 18:49	U	50
Methylene Chloride	75-09-2	BRL	1.08	mg/kg	11.01.2019 18:49	U	50
MTBE	1634-04-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Naphthalene	91-20-3	BRL	0.540	mg/kg	11.01.2019 18:49	U	50
n-Butylbenzene	104-51-8	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
n-Propylbenzene	103-65-1	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
o-Xylene	95-47-6	BRL	0.0540	mg/kg	11.01.2019 18:49	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Sec-Butylbenzene	135-98-8	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Styrene	100-42-5	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
tert-Butylbenzene	98-06-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Tetrachloroethylene	127-18-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Toluene	108-88-3	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Total Xylenes	1330-20-7	BRL	0.0540	mg/kg	11.01.2019 18:49	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Trichloroethene	79-01-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Trichlorofluoromethane	75-69-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Vinyl Acetate	108-05-4	BRL	0.540	mg/kg	11.01.2019 18:49	U	50
Vinyl Chloride	75-01-4	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
1,3-Butadiene	106-99-0	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Cyclohexane	110-82-7	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Dicyclopentadiene	77-73-6	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Methylcyclohexane	108-87-2	BRL	0.540	mg/kg	11.01.2019 18:49	U	50
n-Hexane	110-54-3	BRL	0.540	mg/kg	11.01.2019 18:49	U	50
4-Ethyltoluene	622-96-8	BRL	0.270	mg/kg	11.01.2019 18:49	U	50
Propene	115-07-1	BRL	0.270	mg/kg	11.01.2019 18:49	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B17-5.0-5.5**
Lab Sample Id: 641801-031

Matrix: Soil
Date Collected: 10.30.2019 10:55

Date Received:11.01.2019 09:30
Sample Depth: 5.0 - 5.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106167

Date Prep: 11.01.2019 15:00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	88	%	53-142	11.01.2019 18:49	
1,2-Dichloroethane-D4	98	%	56-150	11.01.2019 18:49	
Toluene-D8	105	%	70-130	11.01.2019 18:49	
4-Bromofluorobenzene	93	%	68-152	11.01.2019 18:49	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B17-7.5-8.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-032	Date Collected:	10.30.2019 11:40	Sample Depth:	7.5 - 8.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0224**	0.0185	mg/kg	11.04.2019 15:33		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.3**	1.79	mg/kg	11.05.2019 00:27		10
Barium	7440-39-3	**96.3**	3.57	mg/kg	11.05.2019 00:27		10
Cadmium	7440-43-9	BRL	1.79	mg/kg	11.05.2019 00:27	U	10
Chromium	7440-47-3	**12.1**	3.57	mg/kg	11.05.2019 00:27		10
Lead	7439-92-1	**37.7**	1.79	mg/kg	11.05.2019 00:27		10
Selenium	7782-49-2	BRL	1.79	mg/kg	11.05.2019 00:27	U	10
Silver	7440-22-4	BRL	1.79	mg/kg	11.05.2019 00:27	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B17-7.5-8.0**
Lab Sample Id: 641801-032

Matrix: Soil
Date Collected: 10.30.2019 11:40

Date Received:11.01.2019 09:30
Sample Depth: 7.5 - 8.0

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106302

Date Prep: 11.01.2019 16:36

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0270**	0.0167	mg/kg	11.01.2019 21:26		10
Acenaphthylene	208-96-8	**0.689**	0.0167	mg/kg	11.01.2019 21:26		10
Anthracene	120-12-7	**0.316**	0.0167	mg/kg	11.01.2019 21:26		10
Benzo(a)anthracene	56-55-3	**1.27**	0.0167	mg/kg	11.01.2019 21:26		10
Benzo(a)pyrene	50-32-8	**2.33**	0.0167	mg/kg	11.01.2019 21:26		10
Benzo(b)fluoranthene	205-99-2	**2.37**	0.0167	mg/kg	11.01.2019 21:26		10
Benzo(g,h,i)perylene	191-24-2	**1.84**	0.0167	mg/kg	11.01.2019 21:26		10
Benzo(k)fluoranthene	207-08-9	**0.799**	0.0167	mg/kg	11.01.2019 21:26		10
Chrysene	218-01-9	**1.60**	0.0167	mg/kg	11.01.2019 21:26		10
Dibenz(a,h)Anthracene	53-70-3	**0.210**	0.0167	mg/kg	11.01.2019 21:26		10
Fluoranthene	206-44-0	**4.63**	0.0834	mg/kg	11.04.2019 11:23	D	50
Fluorene	86-73-7	**0.159**	0.0167	mg/kg	11.01.2019 21:26		10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.35**	0.0167	mg/kg	11.01.2019 21:26		10
Naphthalene	91-20-3	**0.967**	0.167	mg/kg	11.01.2019 21:26		10
Phenanthrene	85-01-8	**3.16**	0.0167	mg/kg	11.01.2019 21:26		10
Pyrene	129-00-0	**5.80**	0.0834	mg/kg	11.04.2019 11:23	D	50

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	123	%	31-130	11.01.2019 21:26	
2-Fluorobiphenyl	105	%	51-133	11.01.2019 21:26	
Terphenyl-D14	125	%	46-137	11.01.2019 21:26	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B17-10.0-10.5**
Matrix: Soil
Date Received:11.01.2019 09:30
Lab Sample Id: 641801-033
Date Collected: 10.30.2019 11:45
Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture: 0
Analyst: ANJ
Date Prep: 11.04.2019 12:00
Basis: Dry Weight
Seq Number: 3106366
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0179	mg/kg	11.04.2019 15:35	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.04.2019 15:15
Basis: Wet Weight
Seq Number: 3106405
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**19.4**	1.92	mg/kg	11.05.2019 00:30		10
Barium	7440-39-3	**237**	3.85	mg/kg	11.05.2019 00:30		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.05.2019 00:30	U	10
Chromium	7440-47-3	**11.4**	3.85	mg/kg	11.05.2019 00:30		10
Lead	7439-92-1	**15.7**	1.92	mg/kg	11.05.2019 00:30		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.05.2019 00:30	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.05.2019 00:30	U	10

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Sample Id:	**D-B17-10.0-10.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-033	Date Collected:	10.30.2019 11:45	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:39	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00836	mg/kg	11.04.2019 12:12	U	5
Acenaphthylene	208-96-8	**0.204**	0.00836	mg/kg	11.04.2019 12:12		5
Anthracene	120-12-7	**0.0934**	0.00836	mg/kg	11.04.2019 12:12		5
Benzo(a)anthracene	56-55-3	**0.409**	0.00836	mg/kg	11.04.2019 12:12		5
Benzo(a)pyrene	50-32-8	**0.747**	0.00836	mg/kg	11.04.2019 12:12		5
Benzo(b)fluoranthene	205-99-2	**0.714**	0.00836	mg/kg	11.04.2019 12:12		5
Benzo(g,h,i)perylene	191-24-2	**0.964**	0.00836	mg/kg	11.04.2019 12:12		5
Benzo(k)fluoranthene	207-08-9	**0.246**	0.00836	mg/kg	11.04.2019 12:12		5
Chrysene	218-01-9	**0.503**	0.00836	mg/kg	11.04.2019 12:12		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00836	mg/kg	11.04.2019 12:12	U	5
Fluoranthene	206-44-0	**1.48**	0.00836	mg/kg	11.04.2019 12:12		5
Fluorene	86-73-7	**0.0533**	0.00836	mg/kg	11.04.2019 12:12		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.633**	0.00836	mg/kg	11.04.2019 12:12		5
Naphthalene	91-20-3	**0.294**	0.0836	mg/kg	11.04.2019 12:12		5
Phenanthrene	85-01-8	**1.10**	0.00836	mg/kg	11.04.2019 12:12		5
Pyrene	129-00-0	**1.77**	0.0167	mg/kg	11.04.2019 17:12	D	10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	100	%	31-130	11.04.2019 12:12	
2-Fluorobiphenyl	103	%	51-133	11.04.2019 12:12	
Terphenyl-D14	121	%	46-137	11.04.2019 12:12	

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Sample Id:	**D-B17-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-034	Date Collected:	10.30.2019 11:55	Sample Depth:	15.0 - 15.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	11.04.2019 15:37	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.7**	1.67	mg/kg	11.05.2019 00:33		10
Barium	7440-39-3	**250**	3.33	mg/kg	11.05.2019 00:33		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.05.2019 00:33	U	10
Chromium	7440-47-3	**7.87**	3.33	mg/kg	11.05.2019 00:33		10
Lead	7439-92-1	**10.8**	1.67	mg/kg	11.05.2019 00:33		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.05.2019 00:33	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.05.2019 00:33	U	10

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Sample Id:	**D-B17-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-034	Date Collected:	10.30.2019 11:55	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:42	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 12:46	U	1
Acenaphthylene	208-96-8	**0.00837**	0.00167	mg/kg	11.04.2019 12:46		1
Anthracene	120-12-7	**0.00471**	0.00167	mg/kg	11.04.2019 12:46		1
Benzo(a)anthracene	56-55-3	**0.0191**	0.00167	mg/kg	11.04.2019 12:46		1
Benzo(a)pyrene	50-32-8	**0.0318**	0.00167	mg/kg	11.04.2019 12:46		1
Benzo(b)fluoranthene	205-99-2	**0.0330**	0.00167	mg/kg	11.04.2019 12:46		1
Benzo(g,h,i)perylene	191-24-2	**0.0285**	0.00167	mg/kg	11.04.2019 12:46		1
Benzo(k)fluoranthene	207-08-9	**0.0109**	0.00167	mg/kg	11.04.2019 12:46		1
Chrysene	218-01-9	**0.0220**	0.00167	mg/kg	11.04.2019 12:46		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 12:46	U	1
Fluoranthene	206-44-0	**0.0671**	0.00167	mg/kg	11.04.2019 12:46		1
Fluorene	86-73-7	**0.00211**	0.00167	mg/kg	11.04.2019 12:46		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0209**	0.00167	mg/kg	11.04.2019 12:46		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.04.2019 12:46	U	1
Phenanthrene	85-01-8	**0.0485**	0.00167	mg/kg	11.04.2019 12:46		1
Pyrene	129-00-0	**0.0815**	0.00167	mg/kg	11.04.2019 12:46		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	98	%	31-130	11.04.2019 12:46	
2-Fluorobiphenyl	99	%	51-133	11.04.2019 12:46	
Terphenyl-D14	106	%	46-137	11.04.2019 12:46	

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Sample Id:	**D-B17-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-035	Date Collected:	10.30.2019 12:00	Sample Depth:	19.5 - 20.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.04.2019 15:42	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.1**	2.00	mg/kg	11.05.2019 00:36		10
Barium	7440-39-3	**131**	4.00	mg/kg	11.05.2019 00:36		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.05.2019 00:36	U	10
Chromium	7440-47-3	**23.3**	4.00	mg/kg	11.05.2019 00:36		10
Lead	7439-92-1	**7.38**	2.00	mg/kg	11.05.2019 00:36		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.05.2019 00:36	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.05.2019 00:36	U	10

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Sample Id:	**D-B17-19.5-20.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-035	Date Collected:	10.30.2019 12:00	Sample Depth:	19.5 - 20.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:45	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 13:52	U	1
Acenaphthylene	208-96-8	**0.00175**	0.00167	mg/kg	11.04.2019 13:52		1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.04.2019 13:52	U	1
Benzo(a)anthracene	56-55-3	**0.00405**	0.00167	mg/kg	11.04.2019 13:52		1
Benzo(a)pyrene	50-32-8	**0.00705**	0.00167	mg/kg	11.04.2019 13:52		1
Benzo(b)fluoranthene	205-99-2	**0.00759**	0.00167	mg/kg	11.04.2019 13:52		1
Benzo(g,h,i)perylene	191-24-2	**0.00731**	0.00167	mg/kg	11.04.2019 13:52		1
Benzo(k)fluoranthene	207-08-9	**0.00238**	0.00167	mg/kg	11.04.2019 13:52		1
Chrysene	218-01-9	**0.00454**	0.00167	mg/kg	11.04.2019 13:52		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 13:52	U	1
Fluoranthene	206-44-0	**0.0130**	0.00167	mg/kg	11.04.2019 13:52		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.04.2019 13:52	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00508**	0.00167	mg/kg	11.04.2019 13:52		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.04.2019 13:52	U	1
Phenanthrene	85-01-8	**0.00783**	0.00167	mg/kg	11.04.2019 13:52		1
Pyrene	129-00-0	**0.0161**	0.00167	mg/kg	11.04.2019 13:52		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	66	%	31-130	11.04.2019 13:52	
2-Fluorobiphenyl	69	%	51-133	11.04.2019 13:52	
Terphenyl-D14	108	%	46-137	11.04.2019 13:52	

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APS, Phoenix, AZ

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Sample Id:	**D-B24-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-036	Date Collected:	10.30.2019 14:50	Sample Depth:	2.5 - 3.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0200	mg/kg	11.04.2019 15:44	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.3**	1.85	mg/kg	11.05.2019 00:39		10
Barium	7440-39-3	**110**	3.70	mg/kg	11.05.2019 00:39		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 00:39	U	10
Chromium	7440-47-3	**8.67**	3.70	mg/kg	11.05.2019 00:39		10
Lead	7439-92-1	**9.28**	1.85	mg/kg	11.05.2019 00:39		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 00:39	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 00:39	U	10

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Sample Id:	**D-B24-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-036	Date Collected:	10.30.2019 14:50	Sample Depth:	2.5 - 3.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:48	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.04.2019 14:09	U	1
Acenaphthylene	208-96-8	**0.00570**	0.00166	mg/kg	11.04.2019 14:09		1
Anthracene	120-12-7	**0.00289**	0.00166	mg/kg	11.04.2019 14:09		1
Benzo(a)anthracene	56-55-3	**0.0102**	0.00166	mg/kg	11.04.2019 14:09		1
Benzo(a)pyrene	50-32-8	**0.0233**	0.00166	mg/kg	11.04.2019 14:09		1
Benzo(b)fluoranthene	205-99-2	**0.0232**	0.00166	mg/kg	11.04.2019 14:09		1
Benzo(g,h,i)perylene	191-24-2	**0.0306**	0.00166	mg/kg	11.04.2019 14:09		1
Benzo(k)fluoranthene	207-08-9	**0.00672**	0.00166	mg/kg	11.04.2019 14:09		1
Chrysene	218-01-9	**0.0134**	0.00166	mg/kg	11.04.2019 14:09		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.04.2019 14:09	U	1
Fluoranthene	206-44-0	**0.0416**	0.00166	mg/kg	11.04.2019 14:09		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.04.2019 14:09	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0178**	0.00166	mg/kg	11.04.2019 14:09		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.04.2019 14:09	U	1
Phenanthrene	85-01-8	**0.0270**	0.00166	mg/kg	11.04.2019 14:09		1
Pyrene	129-00-0	**0.0514**	0.00166	mg/kg	11.04.2019 14:09		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	91	%	31-130	11.04.2019 14:09	
2-Fluorobiphenyl	89	%	51-133	11.04.2019 14:09	
Terphenyl-D14	100	%	46-137	11.04.2019 14:09	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B24-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-037	Date Collected:	10.30.2019 15:00	Sample Depth:	5.0 - 5.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.04.2019 15:46	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**41.6**	1.72	mg/kg	11.05.2019 00:41		10
Barium	7440-39-3	**174**	3.45	mg/kg	11.05.2019 00:41		10
Cadmium	7440-43-9	BRL	1.72	mg/kg	11.05.2019 00:41	U	10
Chromium	7440-47-3	**12.4**	3.45	mg/kg	11.05.2019 00:41		10
Lead	7439-92-1	**13.2**	1.72	mg/kg	11.05.2019 00:41		10
Selenium	7782-49-2	BRL	1.72	mg/kg	11.05.2019 00:41	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	11.05.2019 00:41	U	10

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APS MPG Douglas, AZ

Sample Id:	**D-B24-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-037	Date Collected:	10.30.2019 15:00	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:51	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00243**	0.00167	mg/kg	11.04.2019 14:26		1
Acenaphthylene	208-96-8	**0.0434**	0.00167	mg/kg	11.04.2019 14:26		1
Anthracene	120-12-7	**0.0211**	0.00167	mg/kg	11.04.2019 14:26		1
Benzo(a)anthracene	56-55-3	**0.0630**	0.00167	mg/kg	11.04.2019 14:26		1
Benzo(a)pyrene	50-32-8	**0.150**	0.00167	mg/kg	11.04.2019 14:26		1
Benzo(b)fluoranthene	205-99-2	**0.147**	0.00167	mg/kg	11.04.2019 14:26		1
Benzo(g,h,i)perylene	191-24-2	**0.163**	0.00167	mg/kg	11.04.2019 14:26		1
Benzo(k)fluoranthene	207-08-9	**0.0434**	0.00167	mg/kg	11.04.2019 14:26		1
Chrysene	218-01-9	**0.0875**	0.00167	mg/kg	11.04.2019 14:26		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 14:26	U	1
Fluoranthene	206-44-0	**0.278**	0.00167	mg/kg	11.04.2019 14:26		1
Fluorene	86-73-7	**0.00674**	0.00167	mg/kg	11.04.2019 14:26		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.108**	0.00167	mg/kg	11.04.2019 14:26		1
Naphthalene	91-20-3	**0.0302**	0.0167	mg/kg	11.04.2019 14:26		1
Phenanthrene	85-01-8	**0.187**	0.00167	mg/kg	11.04.2019 14:26		1
Pyrene	129-00-0	**0.362**	0.00833	mg/kg	11.04.2019 17:28	D	5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	87	%	31-130	11.04.2019 14:26	
2-Fluorobiphenyl	93	%	51-133	11.04.2019 14:26	
Terphenyl-D14	106	%	46-137	11.04.2019 14:26	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

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Sample Id:	**D-B24-7.5-8.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-038	Date Collected:	10.30.2019 15:10	Sample Depth:	7.5 - 8.0

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0167	mg/kg	11.04.2019 15:48	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.1**	1.82	mg/kg	11.05.2019 00:44		10
Barium	7440-39-3	**87.8**	3.64	mg/kg	11.05.2019 00:44		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.05.2019 00:44	U	10
Chromium	7440-47-3	**7.56**	3.64	mg/kg	11.05.2019 00:44		10
Lead	7439-92-1	**22.9**	1.82	mg/kg	11.05.2019 00:44		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.05.2019 00:44	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.05.2019 00:44	U	10

Certificate of Analytical Results 641801

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Sample Id:	**D-B24-7.5-8.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-038	Date Collected:	10.30.2019 15:10	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 16:54	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0281**	0.0167	mg/kg	11.04.2019 14:42		10
Acenaphthylene	208-96-8	**0.407**	0.0167	mg/kg	11.04.2019 14:42		10
Anthracene	120-12-7	**0.172**	0.0167	mg/kg	11.04.2019 14:42		10
Benzo(a)anthracene	56-55-3	**0.491**	0.0167	mg/kg	11.04.2019 14:42		10
Benzo(a)pyrene	50-32-8	**1.18**	0.0167	mg/kg	11.04.2019 14:42		10
Benzo(b)fluoranthene	205-99-2	**1.24**	0.0167	mg/kg	11.04.2019 14:42		10
Benzo(g,h,i)perylene	191-24-2	**1.16**	0.0167	mg/kg	11.04.2019 14:42		10
Benzo(k)fluoranthene	207-08-9	**0.308**	0.0167	mg/kg	11.04.2019 14:42		10
Chrysene	218-01-9	**0.707**	0.0167	mg/kg	11.04.2019 14:42		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.04.2019 14:42	U	10
Fluoranthene	206-44-0	**2.30**	0.0167	mg/kg	11.04.2019 14:42		10
Fluorene	86-73-7	**0.0514**	0.0167	mg/kg	11.04.2019 14:42		10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.801**	0.0167	mg/kg	11.04.2019 14:42		10
Naphthalene	91-20-3	**0.321**	0.167	mg/kg	11.04.2019 14:42		10
Phenanthrene	85-01-8	**1.47**	0.0167	mg/kg	11.04.2019 14:42		10
Pyrene	129-00-0	**2.78**	0.0167	mg/kg	11.04.2019 14:42		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	110	%	31-130	11.04.2019 14:42	
2-Fluorobiphenyl	113	%	51-133	11.04.2019 14:42	
Terphenyl-D14	121	%	46-137	11.04.2019 14:42	

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Sample Id:	**D-B24-15.0-15.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-040	Date Collected:	10.30.2019 15:50	Sample Depth:	15.0 - 15.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	0
Analyst:	ANJ	Date Prep:	11.04.2019 12:00	Basis:	Dry Weight
Seq Number:	3106366			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.04.2019 15:50	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.4**	1.96	mg/kg	11.05.2019 00:47		10
Barium	7440-39-3	**290**	3.92	mg/kg	11.05.2019 00:47		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.05.2019 00:47	U	10
Chromium	7440-47-3	**5.00**	3.92	mg/kg	11.05.2019 00:47		10
Lead	7439-92-1	**11.7**	1.96	mg/kg	11.05.2019 00:47		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.05.2019 00:47	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.05.2019 00:47	U	10

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Sample Id: **D-B24-15.0-15.5**
Lab Sample Id: 641801-040

Matrix: Soil
Date Collected: 10.30.2019 15:50

Date Received:11.01.2019 09:30
Sample Depth: 15.0 - 15.5

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106302

Date Prep: 11.01.2019 16:57

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	11.04.2019 14:59	U	10
Acenaphthylene	208-96-8	**0.196**	0.0167	mg/kg	11.04.2019 14:59		10
Anthracene	120-12-7	**0.149**	0.0167	mg/kg	11.04.2019 14:59		10
Benzo(a)anthracene	56-55-3	**0.386**	0.0167	mg/kg	11.04.2019 14:59		10
Benzo(a)pyrene	50-32-8	**0.877**	0.0167	mg/kg	11.04.2019 14:59		10
Benzo(b)fluoranthene	205-99-2	**0.858**	0.0167	mg/kg	11.04.2019 14:59		10
Benzo(g,h,i)perylene	191-24-2	**0.746**	0.0167	mg/kg	11.04.2019 14:59		10
Benzo(k)fluoranthene	207-08-9	**0.247**	0.0167	mg/kg	11.04.2019 14:59		10
Chrysene	218-01-9	**0.521**	0.0167	mg/kg	11.04.2019 14:59		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.04.2019 14:59	U	10
Fluoranthene	206-44-0	**1.72**	0.0167	mg/kg	11.04.2019 14:59		10
Fluorene	86-73-7	**0.0535**	0.0167	mg/kg	11.04.2019 14:59		10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.538**	0.0167	mg/kg	11.04.2019 14:59		10
Naphthalene	91-20-3	**0.257**	0.167	mg/kg	11.04.2019 14:59		10
Phenanthrene	85-01-8	**1.30**	0.0167	mg/kg	11.04.2019 14:59		10
Pyrene	129-00-0	**2.08**	0.0167	mg/kg	11.04.2019 14:59		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	87	%	31-130	11.04.2019 14:59	
2-Fluorobiphenyl	89	%	51-133	11.04.2019 14:59	
Terphenyl-D14	98	%	46-137	11.04.2019 14:59	

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Sample Id: **D-B25-2.5-3.0** Matrix: Soil Date Received:11.01.2019 09:30
Lab Sample Id: 641801-041 Date Collected: 10.30.2019 16:20 Sample Depth: 2.5 - 3.0

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.01.2019 14:00 Basis: Wet Weight
Seq Number: 3106209 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0577	mg/kg	11.01.2019 16:00	U	1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.04.2019 12:00 Basis: Dry Weight
Seq Number: 3106366 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.04.2019 15:52	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.04.2019 15:15 Basis: Wet Weight
Seq Number: 3106405 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.8**	1.85	mg/kg	11.05.2019 00:56		10
Barium	7440-39-3	**174**	3.70	mg/kg	11.05.2019 00:56		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 00:56	U	10
Chromium	7440-47-3	**11.9**	3.70	mg/kg	11.05.2019 00:56		10
Lead	7439-92-1	**9.12**	1.85	mg/kg	11.05.2019 00:56		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 00:56	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 00:56	U	10

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Sample Id: **D-B25-2.5-3.0** Matrix: Soil Date Received:11.01.2019 09:30

Lab Sample Id: 641801-041 Date Collected: 10.30.2019 16:20 Sample Depth: 2.5 - 3.0

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.04.2019 12:26		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.01.2019 15:00		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.44**		SU	11.04.2019 12:44		1
Temperature	TEMP	**25.0**		Deg C	11.04.2019 12:44	+	1

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Sample Id: **D-B25-2.5-3.0**
Lab Sample Id: 641801-041

Matrix: Soil
Date Collected: 10.30.2019 16:20

Date Received:11.01.2019 09:30
Sample Depth: 2.5 - 3.0

Analytical Method: PCBs by SW 8082A
Tech: JOZ
Analyst: SHM
Seq Number: 3106445

Date Prep: 11.04.2019 11:21

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0167	mg/kg	11.05.2019 11:36	U	1
PCB-1221	11104-28-2	BRL	0.0167	mg/kg	11.05.2019 11:36	U	1
PCB-1232	11141-16-5	BRL	0.0167	mg/kg	11.05.2019 11:36	U	1
PCB-1242	53469-21-9	BRL	0.0167	mg/kg	11.05.2019 11:36	U	1
PCB-1248	12672-29-6	BRL	0.0167	mg/kg	11.05.2019 11:36	U	1
PCB-1254	11097-69-1	BRL	0.0167	mg/kg	11.05.2019 11:36	U	1
PCB-1260	11096-82-5	BRL	0.0167	mg/kg	11.05.2019 11:36	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	117	%	39-125	11.05.2019 11:36	
Tetrachloro-m-xylene	65	%	37-124	11.05.2019 11:36	

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Sample Id:	**D-B25-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-041	Date Collected:	10.30.2019 16:20	Sample Depth:	2.5 - 3.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 17:00	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 15:16	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.04.2019 15:16	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.04.2019 15:16	U	1
Benzo(a)anthracene	56-55-3	**0.00274**	0.00167	mg/kg	11.04.2019 15:16		1
Benzo(a)pyrene	50-32-8	**0.00357**	0.00167	mg/kg	11.04.2019 15:16		1
Benzo(b)fluoranthene	205-99-2	**0.00531**	0.00167	mg/kg	11.04.2019 15:16		1
Benzo(g,h,i)perylene	191-24-2	**0.00299**	0.00167	mg/kg	11.04.2019 15:16		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.04.2019 15:16	U	1
Chrysene	218-01-9	**0.00320**	0.00167	mg/kg	11.04.2019 15:16		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 15:16	U	1
Fluoranthene	206-44-0	**0.00662**	0.00167	mg/kg	11.04.2019 15:16		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.04.2019 15:16	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00250**	0.00167	mg/kg	11.04.2019 15:16		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.04.2019 15:16	U	1
Phenanthrene	85-01-8	**0.00288**	0.00167	mg/kg	11.04.2019 15:16		1
Pyrene	129-00-0	**0.00658**	0.00167	mg/kg	11.04.2019 15:16		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	82	%	31-130	11.04.2019 15:16	
2-Fluorobiphenyl	85	%	51-133	11.04.2019 15:16	
Terphenyl-D14	95	%	46-137	11.04.2019 15:16	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B25-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-041	Date Collected:	10.30.2019 16:20	Sample Depth:	2.5 - 3.0
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,1-Dichloroethane	75-34-3	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,1-Dichloroethene	75-35-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,1-Dichloropropene	563-58-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2-Dibromoethane	106-93-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2-Dichloroethane	107-06-2	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,2-Dichloropropane	78-87-5	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,3-Dichloropropane	142-28-9	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
2,2-Dichloropropane	594-20-7	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
2-Butanone	78-93-3	BRL	0.901	mg/kg	11.01.2019 19:10	U	50
2-Chlorotoluene	95-49-8	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
2-Hexanone	591-78-6	BRL	2.25	mg/kg	11.01.2019 19:10	U	50
4-Chlorotoluene	106-43-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.25	mg/kg	11.01.2019 19:10	U	50
Acetone	67-64-1	BRL	4.50	mg/kg	11.01.2019 19:10	U	50
Benzene	71-43-2	BRL	0.0450	mg/kg	11.01.2019 19:10	U	50
Bromobenzene	108-86-1	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Bromochloromethane	74-97-5	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Bromodichloromethane	75-27-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Bromoform	75-25-2	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Bromomethane	74-83-9	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Carbon Disulfide	75-15-0	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Carbon Tetrachloride	56-23-5	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Chlorobenzene	108-90-7	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Chloroethane	75-00-3	BRL	0.450	mg/kg	11.01.2019 19:10	U	50
Chloroform	67-66-3	BRL	0.225	mg/kg	11.01.2019 19:10	U	50

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APS, Phoenix, AZ

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Sample Id:	**D-B25-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-041	Date Collected:	10.30.2019 16:20	Sample Depth:	2.5 - 3.0
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Dibromochloromethane	124-48-1	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Dibromomethane	74-95-3	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Ethylbenzene	100-41-4	BRL	0.0450	mg/kg	11.01.2019 19:10	U	50
Hexachlorobutadiene	87-68-3	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.901	mg/kg	11.01.2019 19:10	U	50
Isopropylbenzene	98-82-8	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
m,p-Xylenes	179601-23-1	BRL	0.0901	mg/kg	11.01.2019 19:10	U	50
Methylene Chloride	75-09-2	BRL	0.901	mg/kg	11.01.2019 19:10	U	50
MTBE	1634-04-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Naphthalene	91-20-3	BRL	0.450	mg/kg	11.01.2019 19:10	U	50
n-Butylbenzene	104-51-8	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
n-Propylbenzene	103-65-1	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
o-Xylene	95-47-6	BRL	0.0450	mg/kg	11.01.2019 19:10	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Sec-Butylbenzene	135-98-8	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Styrene	100-42-5	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
tert-Butylbenzene	98-06-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Tetrachloroethylene	127-18-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Toluene	108-88-3	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Total Xylenes	1330-20-7	BRL	0.0450	mg/kg	11.01.2019 19:10	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Trichloroethene	79-01-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Trichlorofluoromethane	75-69-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Vinyl Acetate	108-05-4	BRL	0.450	mg/kg	11.01.2019 19:10	U	50
Vinyl Chloride	75-01-4	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
1,3-Butadiene	106-99-0	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Cyclohexane	110-82-7	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Dicyclopentadiene	77-73-6	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Methylcyclohexane	108-87-2	BRL	0.450	mg/kg	11.01.2019 19:10	U	50
n-Hexane	110-54-3	BRL	0.450	mg/kg	11.01.2019 19:10	U	50
4-Ethyltoluene	622-96-8	BRL	0.225	mg/kg	11.01.2019 19:10	U	50
Propene	115-07-1	BRL	0.225	mg/kg	11.01.2019 19:10	U	50

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B25-2.5-3.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-041	Date Collected:	10.30.2019 16:20	Sample Depth:	2.5 - 3.0
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.01.2019 15:00	Basis:	Wet Weight
Seq Number:	3106167			SUB:	T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	91	%	53-142	11.01.2019 19:10	
1,2-Dichloroethane-D4	100	%	56-150	11.01.2019 19:10	
Toluene-D8	105	%	70-130	11.01.2019 19:10	
4-Bromofluorobenzene	93	%	68-152	11.01.2019 19:10	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B25-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-042	Date Collected:	10.30.2019 16:30	Sample Depth:	5.0 - 5.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	11.05.2019 08:30	Basis:	Wet Weight
Seq Number:	3106454			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0179	mg/kg	11.05.2019 12:25	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.04.2019 15:15	Basis:	Wet Weight
Seq Number:	3106405			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**50.3**	1.67	mg/kg	11.05.2019 00:59		10
Barium	7440-39-3	**126**	3.33	mg/kg	11.05.2019 00:59		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.05.2019 00:59	U	10
Chromium	7440-47-3	**14.0**	3.33	mg/kg	11.05.2019 00:59		10
Lead	7439-92-1	**13.8**	1.67	mg/kg	11.05.2019 00:59		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.05.2019 00:59	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.05.2019 00:59	U	10

Certificate of Analytical Results 641801

APS, Phoenix, AZ

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Sample Id:	**D-B25-5.0-5.5**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-042	Date Collected:	10.30.2019 16:30	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 17:03	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.04.2019 17:45	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.04.2019 17:45	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.04.2019 17:45	U	1
Benzo(a)anthracene	56-55-3	**0.00294**	0.00167	mg/kg	11.04.2019 17:45		1
Benzo(a)pyrene	50-32-8	**0.00501**	0.00167	mg/kg	11.04.2019 17:45		1
Benzo(b)fluoranthene	205-99-2	**0.00680**	0.00167	mg/kg	11.04.2019 17:45		1
Benzo(g,h,i)perylene	191-24-2	**0.00672**	0.00167	mg/kg	11.04.2019 17:45		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.04.2019 17:45	U	1
Chrysene	218-01-9	**0.00407**	0.00167	mg/kg	11.04.2019 17:45		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.04.2019 17:45	U	1
Fluoranthene	206-44-0	**0.0119**	0.00167	mg/kg	11.04.2019 17:45		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.04.2019 17:45	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00452**	0.00167	mg/kg	11.04.2019 17:45		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.04.2019 17:45	U	1
Phenanthrene	85-01-8	**0.00425**	0.00167	mg/kg	11.04.2019 17:45		1
Pyrene	129-00-0	**0.0125**	0.00167	mg/kg	11.04.2019 17:45		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	63	%	31-130	11.04.2019 17:45	
2-Fluorobiphenyl	66	%	51-133	11.04.2019 17:45	
Terphenyl-D14	104	%	46-137	11.04.2019 17:45	

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B25-7.5-8.0**
Lab Sample Id: 641801-043

Matrix: Soil
Date Collected: 10.30.2019 16:55

Date Received:11.01.2019 09:30
Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106454

Date Prep: 11.05.2019 08:30

Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.05.2019 12:19	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106405

Date Prep: 11.04.2019 15:15

Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**22.2**	1.67	mg/kg	11.05.2019 01:02		10
Barium	7440-39-3	**89.3**	3.33	mg/kg	11.05.2019 01:02		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.05.2019 01:02	U	10
Chromium	7440-47-3	**12.1**	3.33	mg/kg	11.05.2019 01:02		10
Lead	7439-92-1	**15.2**	1.67	mg/kg	11.05.2019 01:02		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.05.2019 01:02	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.05.2019 01:02	U	10

Analytical Method: FOC By ASTM D2974
Tech: YAV
Analyst: YAV
Seq Number: 3106488

% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**2.50**	0.0100	%	11.05.2019 15:45	+	1

Certificate of Analytical Results 641801

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B25-7.5-8.0**	Matrix:	Soil	Date Received:	11.01.2019 09:30
Lab Sample Id:	641801-043	Date Collected:	10.30.2019 16:55	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.01.2019 17:06	Basis:	Wet Weight
Seq Number:	3106302			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.04.2019 18:01	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.04.2019 18:01	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.04.2019 18:01	U	1
Benzo(a)anthracene	56-55-3	**0.00205**	0.00166	mg/kg	11.04.2019 18:01		1
Benzo(a)pyrene	50-32-8	**0.00301**	0.00166	mg/kg	11.04.2019 18:01		1
Benzo(b)fluoranthene	205-99-2	**0.00432**	0.00166	mg/kg	11.04.2019 18:01		1
Benzo(g,h,i)perylene	191-24-2	**0.00412**	0.00166	mg/kg	11.04.2019 18:01		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.04.2019 18:01	U	1
Chrysene	218-01-9	**0.00258**	0.00166	mg/kg	11.04.2019 18:01		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.04.2019 18:01	U	1
Fluoranthene	206-44-0	**0.00518**	0.00166	mg/kg	11.04.2019 18:01		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.04.2019 18:01	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00286**	0.00166	mg/kg	11.04.2019 18:01		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.04.2019 18:01	U	1
Phenanthrene	85-01-8	**0.00243**	0.00166	mg/kg	11.04.2019 18:01		1
Pyrene	129-00-0	**0.00549**	0.00166	mg/kg	11.04.2019 18:01		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	70	%	31-130	11.04.2019 18:01	
2-Fluorobiphenyl	73	%	51-133	11.04.2019 18:01	
Terphenyl-D14	108	%	46-137	11.04.2019 18:01	

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Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3106209 Matrix: Solid Date Prep: 11.01.2019
MB Sample Id: 7689428-1-BLK LCS Sample Id: 7689428-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Cyanide, Total	<0.0298	1.20	1.12	93	85-115	mg/kg	11.01.2019 15:39	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106373 Matrix: Solid Date Prep: 11.04.2019
MB Sample Id: 7689496-1-BLK LCS Sample Id: 7689496-1-BKS LCSD Sample Id: 7689496-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00326	0.169	0.183	108	0.175	104	80-120	4	20	mg/kg	11.04.2019 13:31	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106366 Matrix: Solid Date Prep: 11.04.2019
MB Sample Id: 7689523-1-BLK LCS Sample Id: 7689523-1-BKS LCSD Sample Id: 7689523-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00356	0.185	0.187	101	0.187	101	80-120	0	20	mg/kg	11.04.2019 14:46	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106454 Matrix: Solid Date Prep: 11.05.2019
MB Sample Id: 7689615-1-BLK LCS Sample Id: 7689615-1-BKS LCSD Sample Id: 7689615-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00384	0.200	0.188	94	0.188	94	80-120	0	20	mg/kg	11.05.2019 11:21	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106373 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641801-001 MS Sample Id: 641801-001 S MSD Sample Id: 641801-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0277	0.200	0.235	104	0.232	102	75-125	1	20	mg/kg	11.04.2019 14:06	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106373 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641801-018 MS Sample Id: 641801-018 S MSD Sample Id: 641801-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00771	0.179	0.193	104	0.196	103	75-125	2	20	mg/kg	11.04.2019 13:36	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106366 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641801-026 MS Sample Id: 641801-026 S MSD Sample Id: 641801-026 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0707	0.172	0.241	99	0.247	103	75-125	2	20	mg/kg	11.04.2019 14:52	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106366 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641801-027 MS Sample Id: 641801-027 S MSD Sample Id: 641801-027 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00395	0.179	0.188	103	0.190	104	75-125	1	20	mg/kg	11.04.2019 15:26	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106454 Matrix: Sludge Date Prep: 11.05.2019
Parent Sample Id: 641483-001 MS Sample Id: 641483-001 S MSD Sample Id: 641483-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00377	0.196	0.189	96	0.189	98	75-125	0	20	mg/kg	11.05.2019 11:57	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106454 Matrix: Sludge Date Prep: 11.05.2019
Parent Sample Id: 641491-001 MS Sample Id: 641491-001 S MSD Sample Id: 641491-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00920	0.200	0.208	99	0.202	96	75-125	3	20	mg/kg	11.05.2019 11:27	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106337 Matrix: Solid Date Prep: 11.04.2019
MB Sample Id: 7689510-1-BLK LCS Sample Id: 7689510-1-BKS LCSD Sample Id: 7689510-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.0617	10.0	9.89	99	9.89	99	80-120	0	20	mg/kg	11.04.2019 12:09	
Barium	<0.0347	10.0	10.0	100	9.86	99	80-120	1	20	mg/kg	11.04.2019 12:09	
Cadmium	<0.0116	10.0	9.81	98	9.86	99	80-120	1	20	mg/kg	11.04.2019 12:09	
Chromium	<0.0271	10.0	9.59	96	9.66	97	80-120	1	20	mg/kg	11.04.2019 12:09	
Lead	<0.0194	10.0	9.87	99	9.86	99	80-120	0	20	mg/kg	11.04.2019 12:09	
Selenium	<0.0496	10.0	10.0	100	9.89	99	80-120	1	20	mg/kg	11.04.2019 12:09	
Silver	<0.0159	5.00	4.80	96	4.84	97	80-120	1	20	mg/kg	11.04.2019 12:09	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106408 Matrix: Solid Date Prep: 11.04.2019
MB Sample Id: 7689550-1-BLK LCS Sample Id: 7689550-1-BKS LCSD Sample Id: 7689550-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	10.1	101	10.3	103	80-120	2	20	mg/kg	11.04.2019 21:13	
Barium	<0.400	10.0	10.3	103	10.1	101	80-120	2	20	mg/kg	11.04.2019 21:13	
Cadmium	<0.200	10.0	10.5	105	10.2	102	80-120	3	20	mg/kg	11.04.2019 21:13	
Chromium	<0.400	10.0	10.3	103	10.1	101	80-120	2	20	mg/kg	11.04.2019 21:13	
Lead	<0.200	10.0	10.4	104	10.2	102	80-120	2	20	mg/kg	11.04.2019 21:13	
Selenium	<0.200	10.0	10.4	104	10.4	104	80-120	0	20	mg/kg	11.04.2019 21:13	
Silver	<0.200	5.00	5.32	106	5.15	103	80-120	3	20	mg/kg	11.04.2019 21:13	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106405 Matrix: Solid Date Prep: 11.04.2019
MB Sample Id: 7689571-1-BLK LCS Sample Id: 7689571-1-BKS LCSD Sample Id: 7689571-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	10.4	104	10.3	103	80-120	1	20	mg/kg	11.04.2019 23:54	
Barium	<0.400	10.0	10.2	102	10.1	101	80-120	1	20	mg/kg	11.04.2019 23:54	
Cadmium	<0.200	10.0	10.4	104	10.4	104	80-120	0	20	mg/kg	11.04.2019 23:54	
Chromium	<0.400	10.0	10.2	102	10.2	102	80-120	0	20	mg/kg	11.04.2019 23:54	
Lead	<0.200	10.0	10.3	103	10.2	102	80-120	1	20	mg/kg	11.04.2019 23:54	
Selenium	<0.200	10.0	10.4	104	10.6	106	80-120	2	20	mg/kg	11.04.2019 23:54	
Silver	<0.200	5.00	5.29	106	5.26	105	80-120	1	20	mg/kg	11.04.2019 23:54	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106337 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641402-001 MS Sample Id: 641402-001 S MSD Sample Id: 641402-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	6.20	12.4	21.3	122	20.8	118	75-125	2	30	mg/kg	11.04.2019 12:18	
Barium	163	12.4	211	387	206	347	75-125	2	30	mg/kg	11.04.2019 12:18	X
Cadmium	0.533	12.4	14.2	110	14.4	112	75-125	1	30	mg/kg	11.04.2019 12:18	
Chromium	21.0	12.4	38.4	140	38.4	140	75-125	0	30	mg/kg	11.04.2019 12:18	X
Lead	12.3	12.4	28.7	132	28.3	129	75-125	1	30	mg/kg	11.04.2019 12:18	X
Selenium	1.04	12.4	15.4	116	14.8	111	75-125	4	30	mg/kg	11.04.2019 12:18	
Silver	<0.197	6.21	6.54	105	6.52	105	75-125	0	30	mg/kg	11.04.2019 12:18	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106408 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641801-018 MS Sample Id: 641801-018 S MSD Sample Id: 641801-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	14.2	9.43	25.5	120	22.7	100	75-125	12	30	mg/kg	11.04.2019 21:22	
Barium	82.8	9.43	102	204	90.4	90	75-125	12	30	mg/kg	11.04.2019 21:22	X
Cadmium	<1.89	9.43	9.85	104	9.04	107	75-125	9	30	mg/kg	11.04.2019 21:22	
Chromium	12.0	9.43	23.4	121	21.2	109	75-125	10	30	mg/kg	11.04.2019 21:22	
Lead	11.2	9.43	22.6	121	20.0	104	75-125	12	30	mg/kg	11.04.2019 21:22	
Selenium	<1.89	9.43	10.4	110	9.11	108	75-125	13	30	mg/kg	11.04.2019 21:22	
Silver	<1.89	4.72	4.60	97	4.13	97	75-125	11	30	mg/kg	11.04.2019 21:22	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106405 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641801-026 MS Sample Id: 641801-026 S MSD Sample Id: 641801-026 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	11.7	9.26	23.7	130	23.6	129	75-125	0	30	mg/kg	11.05.2019 00:03	X
Barium	180	9.26	216	389	216	389	75-125	0	30	mg/kg	11.05.2019 00:03	X
Cadmium	2.20	9.26	12.8	114	12.5	111	75-125	2	30	mg/kg	11.05.2019 00:03	
Chromium	13.1	9.26	26.0	139	25.4	133	75-125	2	30	mg/kg	11.05.2019 00:03	X
Lead	107	9.26	136	313	135	302	75-125	1	30	mg/kg	11.05.2019 00:03	X
Selenium	<1.85	9.26	11.2	121	10.8	117	75-125	4	30	mg/kg	11.05.2019 00:03	
Silver	<1.85	4.63	5.15	111	5.05	109	75-125	2	30	mg/kg	11.05.2019 00:03	

Analytical Method: **TCLP Mercury by SW 1311/7470A** Prep Method: SW7470P
Seq Number: 3107924 Matrix: Water Date Prep: 11.19.2019
MB Sample Id: 7690601-1-BLK LCS Sample Id: 7690601-1-BKS LCSD Sample Id: 7690601-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00190	95	0.00188	94	80-120	1	20	mg/L	11.19.2019 12:53	

Analytical Method: **TCLP Mercury by SW 1311/7470A** Prep Method: SW7470P
Seq Number: 3107924 Matrix: Ground Water Date Prep: 11.19.2019
Parent Sample Id: 643302-001 MS Sample Id: 643302-001 S MSD Sample Id: 643302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00176	88	0.00179	90	75-125	2	20	mg/L	11.19.2019 13:02	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **TCLP Metal by SW 1311/6010C** Prep Method: SW3010A
Seq Number: 3107971 Matrix: Water Date Prep: 11.19.2019
MB Sample Id: 7690617-1-BLK LCS Sample Id: 7690617-1-BKS LCSD Sample Id: 7690617-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.00550	1.00	0.985	99	0.982	98	75-125	0	20	mg/L	11.19.2019 14:32	
Barium	<0.00135	1.00	0.975	98	0.972	97	75-125	0	20	mg/L	11.19.2019 14:32	
Cadmium	<0.00243	1.00	0.987	99	0.982	98	75-125	1	20	mg/L	11.19.2019 14:32	
Chromium	<0.000811	1.00	1.02	102	1.02	102	75-125	0	20	mg/L	11.19.2019 14:32	
Lead	<0.00237	1.00	1.03	103	1.02	102	75-125	1	20	mg/L	11.19.2019 14:32	
Selenium	<0.00439	1.00	0.978	98	0.975	98	75-125	0	20	mg/L	11.19.2019 14:32	
Silver	<0.00559	0.500	0.499	100	0.498	100	75-125	0	20	mg/L	11.19.2019 14:32	

Analytical Method: **TCLP Metal by SW 1311/6010C** Prep Method: SW3010A
Seq Number: 3107971 Matrix: Waste Water Date Prep: 11.19.2019
Parent Sample Id: 643160-001 MS Sample Id: 643160-001 S MSD Sample Id: 643160-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.0200	1.00	1.02	102	1.03	103	75-125	1	20	mg/L	11.19.2019 14:44	
Barium	0.0686	1.00	1.09	102	1.09	102	75-125	0	20	mg/L	11.19.2019 14:44	
Cadmium	<0.00243	1.00	1.05	105	1.06	106	75-125	1	20	mg/L	11.19.2019 14:44	
Chromium	<0.0100	1.00	1.06	106	1.05	105	75-125	1	20	mg/L	11.19.2019 14:44	
Lead	<0.0150	1.00	1.04	104	1.04	104	75-125	0	20	mg/L	11.19.2019 14:44	
Selenium	0.0688	1.00	1.15	108	1.14	107	75-125	1	20	mg/L	11.19.2019 14:44	
Silver	<0.0300	0.500	0.541	108	0.541	108	75-125	0	20	mg/L	11.19.2019 14:44	

Analytical Method: **FOC By ASTM D2974**
Seq Number: 3106488 Matrix: Solid
MB Sample Id: 3106488-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Fraction Organic Carbon	BRL	%	11.05.2019 15:45	

Analytical Method: **FOC By ASTM D2974**
Seq Number: 3106488 Matrix: Soil
Parent Sample Id: 641801-043 MD Sample Id: 641801-043 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Fraction Organic Carbon	2.50	2.30	8	25	%	11.05.2019 15:45	

Analytical Method: **Flash Point (CC) SW-846 1010**
Seq Number: 3106372 Matrix: Product
Parent Sample Id: 641388-001 MD Sample Id: 641388-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	146	148	1	25	Deg F	11.04.2019 10:26	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

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Analytical Method: **Flash Point (CC) SW-846 1010**
Seq Number: 3106372 Matrix: Sludge
Parent Sample Id: 641758-001 MD Sample Id: 641758-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	>180	>180	0	25	Deg F	11.04.2019 13:30	

Analytical Method: **Paint Filter Liquids Test by SW 9095B**
Seq Number: 3106171 Matrix: Soil
Parent Sample Id: 641446-014 MD Sample Id: 641446-014 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	0		11.01.2019 15:00	

Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3106345 Matrix: Soil
Parent Sample Id: 641801-006 MD Sample Id: 641801-006 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.31	8.32	0	20	SU	11.04.2019 12:44	
Temperature	25.9	25.9	0	25	Deg C	11.04.2019 12:44	

Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3106345 Matrix: Soil
Parent Sample Id: 641882-012 MD Sample Id: 641882-012 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.30	8.31	0	20	SU	11.04.2019 12:44	
Temperature	25.1	25.0	0	25	Deg C	11.04.2019 12:44	

Analytical Method: **PCBs by SW 8082A** Prep Method: SW3550
Seq Number: 3106445 Matrix: Solid Date Prep: 11.04.2019
MB Sample Id: 7689522-1-BLK LCS Sample Id: 7689522-1-BKS LCSD Sample Id: 7689522-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0167	0.167	0.116	69	0.118	71	54-121	2	20	mg/kg	11.05.2019 11:02	
PCB-1260	<0.0167	0.167	0.159	95	0.161	96	41-126	1	20	mg/kg	11.05.2019 11:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	114		119		119		39-125	%	11.05.2019 11:02
Tetrachloro-m-xylene	51		58		59		37-124	%	11.05.2019 11:02

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641801

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Analytical Method: **PCBs by SW 8082A** Prep Method: SW3550
Seq Number: 3106445 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641882-004 MS Sample Id: 641882-004 S MSD Sample Id: 641882-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0333	0.167	0.157	94	0.154	92	54-121	2	20	mg/kg	11.05.2019 12:33	
PCB-1260	<0.0333	0.167	0.157	94	0.154	92	41-126	2	20	mg/kg	11.05.2019 12:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	196	**	123		39-125	%	11.05.2019 12:33
Tetrachloro-m-xylene	87		89		37-124	%	11.05.2019 12:33

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550
Seq Number: 3106302 Matrix: Solid Date Prep: 11.01.2019
MB Sample Id: 7689445-1-BLK LCS Sample Id: 7689445-1-BKS LCSD Sample Id: 7689445-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0288	86	0.0277	83	42-116	4	25	mg/kg	11.01.2019 17:32	
Acenaphthylene	<0.00167	0.0333	0.0279	84	0.0268	80	42-121	4	25	mg/kg	11.01.2019 17:32	
Anthracene	<0.00167	0.0333	0.0285	86	0.0274	82	44-120	4	25	mg/kg	11.01.2019 17:32	
Benzo(a)anthracene	<0.00167	0.0333	0.0305	92	0.0301	90	52-121	1	25	mg/kg	11.01.2019 17:32	
Benzo(a)pyrene	<0.00167	0.0333	0.0304	91	0.0299	90	50-128	2	25	mg/kg	11.01.2019 17:32	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0332	100	0.0337	101	49-137	1	25	mg/kg	11.01.2019 17:32	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0297	89	0.0292	88	47-132	2	25	mg/kg	11.01.2019 17:32	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0291	87	0.0295	89	48-133	1	25	mg/kg	11.01.2019 17:32	
Chrysene	<0.00167	0.0333	0.0298	89	0.0294	88	54-113	1	25	mg/kg	11.01.2019 17:32	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0322	97	0.0316	95	48-133	2	25	mg/kg	11.01.2019 17:32	
Fluoranthene	<0.00167	0.0333	0.0315	95	0.0310	93	54-128	2	25	mg/kg	11.01.2019 17:32	
Fluorene	<0.00167	0.0333	0.0289	87	0.0279	84	44-118	4	25	mg/kg	11.01.2019 17:32	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0316	95	0.0310	93	49-129	2	25	mg/kg	11.01.2019 17:32	
Naphthalene	<0.0167	0.0333	0.0282	85	0.0268	80	40-135	5	25	mg/kg	11.01.2019 17:32	
Phenanthrene	<0.00167	0.0333	0.0297	89	0.0287	86	44-119	3	25	mg/kg	11.01.2019 17:32	
Pyrene	<0.00167	0.0333	0.0300	90	0.0294	88	50-126	2	25	mg/kg	11.01.2019 17:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	100		107		98		31-130	%	11.01.2019 17:32
2-Fluorobiphenyl	102		106		99		51-133	%	11.01.2019 17:32
Terphenyl-D14	112		112		107		46-137	%	11.01.2019 17:32

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641801

APS

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Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106384 Matrix: Solid Date Prep: 11.04.2019

MB Sample Id: 7689442-1-BLK LCS Sample Id: 7689442-1-BKS LCSD Sample Id: 7689442-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0280	84	0.0291	87	42-116	4	25	mg/kg	11.04.2019 10:50	
Acenaphthylene	<0.00167	0.0333	0.0274	82	0.0285	86	42-121	4	25	mg/kg	11.04.2019 10:50	
Anthracene	<0.00167	0.0333	0.0284	85	0.0298	89	44-120	5	25	mg/kg	11.04.2019 10:50	
Benzo(a)anthracene	<0.00167	0.0333	0.0307	92	0.0308	92	52-121	0	25	mg/kg	11.04.2019 10:50	
Benzo(a)pyrene	<0.00167	0.0333	0.0321	96	0.0315	95	50-128	2	25	mg/kg	11.04.2019 10:50	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0348	105	0.0341	102	49-137	2	25	mg/kg	11.04.2019 10:50	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0331	99	0.0324	97	47-132	2	25	mg/kg	11.04.2019 10:50	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0311	93	0.0309	93	48-133	1	25	mg/kg	11.04.2019 10:50	
Chrysene	<0.00167	0.0333	0.0302	91	0.0301	90	54-113	0	25	mg/kg	11.04.2019 10:50	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0333	100	0.0331	99	48-133	1	25	mg/kg	11.04.2019 10:50	
Fluoranthene	<0.00167	0.0333	0.0306	92	0.0312	94	54-128	2	25	mg/kg	11.04.2019 10:50	
Fluorene	<0.00167	0.0333	0.0283	85	0.0295	89	44-118	4	25	mg/kg	11.04.2019 10:50	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0335	101	0.0331	99	49-129	1	25	mg/kg	11.04.2019 10:50	
Naphthalene	<0.0167	0.0333	0.0272	82	0.0280	84	40-135	3	25	mg/kg	11.04.2019 10:50	
Phenanthrene	<0.00167	0.0333	0.0292	88	0.0303	91	44-119	4	25	mg/kg	11.04.2019 10:50	
Pyrene	<0.00167	0.0333	0.0299	90	0.0298	89	50-126	0	25	mg/kg	11.04.2019 10:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	104		104		109		31-130	%	11.04.2019 10:50
2-Fluorobiphenyl	107		106		112		51-133	%	11.04.2019 10:50
Terphenyl-D14	113		112		113		46-137	%	11.04.2019 10:50

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641801

APS

APS MPG Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106513 Matrix: Solid Date Prep: 11.05.2019

MB Sample Id: 7689597-1-BLK LCS Sample Id: 7689597-1-BKS LCSD Sample Id: 7689597-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0296	89	0.0306	92	42-116	3	25	mg/kg	11.05.2019 16:33	
Acenaphthylene	<0.00167	0.0333	0.0286	86	0.0294	88	42-121	3	25	mg/kg	11.05.2019 16:33	
Anthracene	<0.00167	0.0333	0.0301	90	0.0304	91	44-120	1	25	mg/kg	11.05.2019 16:33	
Benzo(a)anthracene	<0.00167	0.0333	0.0311	93	0.0318	95	52-121	2	25	mg/kg	11.05.2019 16:33	
Benzo(a)pyrene	<0.00167	0.0333	0.0319	96	0.0319	96	50-128	0	25	mg/kg	11.05.2019 16:33	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0336	101	0.0339	102	49-137	1	25	mg/kg	11.05.2019 16:33	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0320	96	0.0335	101	47-132	5	25	mg/kg	11.05.2019 16:33	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0318	95	0.0341	102	48-133	7	25	mg/kg	11.05.2019 16:33	
Chrysene	<0.00167	0.0333	0.0308	92	0.0314	94	54-113	2	25	mg/kg	11.05.2019 16:33	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0330	99	0.0346	104	48-133	5	25	mg/kg	11.05.2019 16:33	
Fluoranthene	<0.00167	0.0333	0.0325	98	0.0328	98	54-128	1	25	mg/kg	11.05.2019 16:33	
Fluorene	<0.00167	0.0333	0.0299	90	0.0310	93	44-118	4	25	mg/kg	11.05.2019 16:33	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0329	99	0.0344	103	49-129	4	25	mg/kg	11.05.2019 16:33	
Naphthalene	<0.0167	0.0333	0.0284	85	0.0295	89	40-135	4	25	mg/kg	11.05.2019 16:33	
Phenanthrene	<0.00167	0.0333	0.0311	93	0.0321	96	44-119	3	25	mg/kg	11.05.2019 16:33	
Pyrene	<0.00167	0.0333	0.0311	93	0.0317	95	50-126	2	25	mg/kg	11.05.2019 16:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	114		115		114		31-130	%	11.05.2019 16:33
2-Fluorobiphenyl	118		115		117		51-133	%	11.05.2019 16:33
Terphenyl-D14	118		117		119		46-137	%	11.05.2019 16:33

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MPG Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106302 Matrix: Soil Date Prep: 11.01.2019

Parent Sample Id: 641801-026 MS Sample Id: 641801-026 S MSD Sample Id: 641801-026 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.0166	0.0332	0.0240	72	0.0243	73	42-116	1	25	mg/kg	11.01.2019 20:02	
Acenaphthylene	<0.0122	0.0332	0.0324	98	0.0338	101	42-121	4	25	mg/kg	11.01.2019 20:02	
Anthracene	0.0127	0.0332	0.0339	64	0.0347	66	44-120	2	25	mg/kg	11.01.2019 20:02	
Benzo(a)anthracene	0.0502	0.0332	0.0615	34	0.0624	37	52-121	1	25	mg/kg	11.01.2019 20:02	X
Benzo(a)pyrene	0.0716	0.0332	0.0797	24	0.0807	27	50-128	1	25	mg/kg	11.01.2019 20:02	X
Benzo(b)fluoranthene	0.0991	0.0332	0.0955	0	0.105	18	49-137	9	25	mg/kg	11.01.2019 20:02	X
Benzo(g,h,i)perylene	0.0538	0.0332	0.0607	21	0.0592	16	47-132	3	25	mg/kg	11.01.2019 20:02	X
Benzo(k)fluoranthene	0.0371	0.0332	0.0553	55	0.0585	64	48-133	6	25	mg/kg	11.01.2019 20:02	
Chrysene	0.0711	0.0332	0.0739	8	0.0838	38	54-113	13	25	mg/kg	11.01.2019 20:02	X
Dibenz(a,h)Anthracene	<0.0166	0.0332	0.0279	84	0.0285	85	48-133	2	25	mg/kg	11.01.2019 20:02	
Fluoranthene	0.119	0.0332	0.115	0	0.139	60	54-128	19	25	mg/kg	11.01.2019 20:02	X
Fluorene	<0.0166	0.0332	0.0245	74	0.0243	73	44-118	1	25	mg/kg	11.01.2019 20:02	
Indeno(1,2,3-c,d)Pyrene	0.0454	0.0332	0.0569	35	0.0574	36	49-129	1	25	mg/kg	11.01.2019 20:02	X
Naphthalene	<0.166	0.0332	0.0274	83	0.0279	84	40-135	2	25	mg/kg	11.01.2019 20:02	
Phenanthrene	0.0505	0.0332	0.0663	48	0.0934	128	44-119	34	25	mg/kg	11.01.2019 20:02	XF
Pyrene	0.111	0.0332	0.110	0	0.122	33	50-126	10	25	mg/kg	11.01.2019 20:02	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	110		87		31-130	%	11.01.2019 20:02
2-Fluorobiphenyl	111		88		51-133	%	11.01.2019 20:02
Terphenyl-D14	111		89		46-137	%	11.01.2019 20:02

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MPG Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106384 Matrix: Soil Date Prep: 11.04.2019

Parent Sample Id: 641801-018 MS Sample Id: 641801-018 S MSD Sample Id: 641801-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00166	0.0333	0.0280	84	0.0269	81	42-116	4	25	mg/kg	11.04.2019 13:19	
Acenaphthylene	<0.00166	0.0333	0.0275	83	0.0269	81	42-121	2	25	mg/kg	11.04.2019 13:19	
Anthracene	<0.00166	0.0333	0.0294	88	0.0289	87	44-120	2	25	mg/kg	11.04.2019 13:19	
Benzo(a)anthracene	0.00112	0.0333	0.0322	93	0.0320	93	52-121	1	25	mg/kg	11.04.2019 13:19	
Benzo(a)pyrene	0.00133	0.0333	0.0333	96	0.0331	95	50-128	1	25	mg/kg	11.04.2019 13:19	
Benzo(b)fluoranthene	0.00201	0.0333	0.0366	104	0.0360	102	49-137	2	25	mg/kg	11.04.2019 13:19	
Benzo(g,h,i)perylene	<0.00132	0.0333	0.0242	73	0.0238	71	47-132	2	25	mg/kg	11.04.2019 13:19	
Benzo(k)fluoranthene	<0.00166	0.0333	0.0318	95	0.0313	94	48-133	2	25	mg/kg	11.04.2019 13:19	
Chrysene	0.00115	0.0333	0.0318	92	0.0316	91	54-113	1	25	mg/kg	11.04.2019 13:19	
Dibenz(a,h)Anthracene	<0.00166	0.0333	0.0271	81	0.0270	81	48-133	0	25	mg/kg	11.04.2019 13:19	
Fluoranthene	0.00233	0.0333	0.0353	99	0.0329	92	54-128	7	25	mg/kg	11.04.2019 13:19	
Fluorene	<0.00166	0.0333	0.0282	85	0.0277	83	44-118	2	25	mg/kg	11.04.2019 13:19	
Indeno(1,2,3-c,d)Pyrene	<0.00126	0.0333	0.0273	82	0.0269	81	49-129	1	25	mg/kg	11.04.2019 13:19	
Naphthalene	<0.0166	0.0333	0.0272	82	0.0263	79	40-135	3	25	mg/kg	11.04.2019 13:19	
Phenanthrene	0.00148	0.0333	0.0318	91	0.0308	88	44-119	3	25	mg/kg	11.04.2019 13:19	
Pyrene	0.00257	0.0333	0.0343	95	0.0328	91	50-126	4	25	mg/kg	11.04.2019 13:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	110		103		31-130	%	11.04.2019 13:19
2-Fluorobiphenyl	108		100		51-133	%	11.04.2019 13:19
Terphenyl-D14	111		109		46-137	%	11.04.2019 13:19

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641801

APS

APS MPG Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106167 Matrix: Solid Date Prep: 11.01.2019

MB Sample Id: 7689418-1-BLK LCS Sample Id: 7689418-1-BKS LCSD Sample Id: 7689418-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0474	95	0.0474	95	72-125	0	25	mg/kg	11.01.2019 10:08	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0487	97	0.0475	95	75-125	2	25	mg/kg	11.01.2019 10:08	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0496	99	0.0506	101	74-125	2	25	mg/kg	11.01.2019 10:08	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0488	98	0.0485	97	75-127	1	25	mg/kg	11.01.2019 10:08	
1,1-Dichloroethane	<0.00500	0.0500	0.0500	100	0.0487	97	72-125	3	25	mg/kg	11.01.2019 10:08	
1,1-Dichloroethene	<0.00500	0.0500	0.0504	101	0.0485	97	59-172	4	25	mg/kg	11.01.2019 10:08	
1,1-Dichloropropene	<0.00500	0.0500	0.0525	105	0.0514	103	75-125	2	25	mg/kg	11.01.2019 10:08	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0488	98	0.0509	102	75-137	4	25	mg/kg	11.01.2019 10:08	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0482	96	0.0494	99	75-125	2	25	mg/kg	11.01.2019 10:08	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0501	100	0.0509	102	75-135	2	25	mg/kg	11.01.2019 10:08	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0490	98	0.0491	98	75-125	0	25	mg/kg	11.01.2019 10:08	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0460	92	0.0463	93	59-125	1	25	mg/kg	11.01.2019 10:08	
1,2-Dibromoethane	<0.00500	0.0500	0.0487	97	0.0486	97	73-125	0	25	mg/kg	11.01.2019 10:08	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0488	98	0.0495	99	75-125	1	25	mg/kg	11.01.2019 10:08	
1,2-Dichloroethane	<0.00500	0.0500	0.0462	92	0.0457	91	68-127	1	25	mg/kg	11.01.2019 10:08	
1,2-Dichloropropane	<0.00500	0.0500	0.0492	98	0.0480	96	74-125	2	25	mg/kg	11.01.2019 10:08	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0531	106	0.0537	107	70-130	1	25	mg/kg	11.01.2019 10:08	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0493	99	0.0489	98	75-125	1	25	mg/kg	11.01.2019 10:08	
1,3-Dichloropropane	<0.00500	0.0500	0.0497	99	0.0506	101	75-125	2	25	mg/kg	11.01.2019 10:08	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0485	97	0.0487	97	75-125	0	25	mg/kg	11.01.2019 10:08	
2,2-Dichloropropane	<0.00500	0.0500	0.0498	100	0.0475	95	75-125	5	25	mg/kg	11.01.2019 10:08	
2-Butanone	<0.0200	0.250	0.207	83	0.200	80	75-125	3	25	mg/kg	11.01.2019 10:08	
2-Chlorotoluene	<0.00500	0.0500	0.0514	103	0.0514	103	73-125	0	25	mg/kg	11.01.2019 10:08	
2-Hexanone	<0.0500	0.250	0.220	88	0.221	88	75-125	0	25	mg/kg	11.01.2019 10:08	
4-Chlorotoluene	<0.00500	0.0500	0.0507	101	0.0505	101	74-125	0	25	mg/kg	11.01.2019 10:08	
4-Methyl-2-Pentanone	<0.0500	0.250	0.229	92	0.224	90	60-140	2	25	mg/kg	11.01.2019 10:08	
Acetone	<0.100	0.250	0.158	63	0.155	62	50-150	2	25	mg/kg	11.01.2019 10:08	
Benzene	<0.00100	0.0500	0.0482	96	0.0475	95	66-142	1	25	mg/kg	11.01.2019 10:08	
Bromobenzene	<0.00500	0.0500	0.0509	102	0.0516	103	75-125	1	25	mg/kg	11.01.2019 10:08	
Bromochloromethane	<0.00500	0.0500	0.0468	94	0.0461	92	60-140	2	25	mg/kg	11.01.2019 10:08	
Bromodichloromethane	<0.00500	0.0500	0.0474	95	0.0469	94	75-125	1	25	mg/kg	11.01.2019 10:08	
Bromoform	<0.00500	0.0500	0.0491	98	0.0490	98	75-125	0	25	mg/kg	11.01.2019 10:08	
Bromomethane	<0.00500	0.0500	0.0417	83	0.0391	78	60-140	6	25	mg/kg	11.01.2019 10:08	
Carbon Disulfide	<0.00500	0.0500	0.0537	107	0.0513	103	60-140	5	25	mg/kg	11.01.2019 10:08	
Carbon Tetrachloride	<0.00500	0.0500	0.0515	103	0.0503	101	62-125	2	25	mg/kg	11.01.2019 10:08	
Chlorobenzene	<0.00500	0.0500	0.0483	97	0.0481	96	60-133	0	25	mg/kg	11.01.2019 10:08	
Chloroethane	<0.0100	0.0500	0.0443	89	0.0402	80	60-140	10	25	mg/kg	11.01.2019 10:08	
Chloroform	<0.00500	0.0500	0.0471	94	0.0462	92	74-125	2	25	mg/kg	11.01.2019 10:08	
Chloromethane	<0.00500	0.0500	0.0471	94	0.0470	94	60-140	0	25	mg/kg	11.01.2019 10:08	
cis-1,2-Dichloroethene	<0.00500	0.0500	0.0471	94	0.0457	91	75-125	3	25	mg/kg	11.01.2019 10:08	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0510	102	0.0493	99	74-125	3	25	mg/kg	11.01.2019 10:08	
Dibromochloromethane	<0.00500	0.0500	0.0480	96	0.0485	97	73-125	1	25	mg/kg	11.01.2019 10:08	
Dibromomethane	<0.00500	0.0500	0.0479	96	0.0475	95	69-127	1	25	mg/kg	11.01.2019 10:08	
Dichlorodifluoromethane	<0.00500	0.0500	0.0656	131	0.0610	122	65-135	7	25	mg/kg	11.01.2019 10:08	
Ethylbenzene	<0.00100	0.0500	0.0488	98	0.0483	97	75-125	1	25	mg/kg	11.01.2019 10:08	
Hexachlorobutadiene	<0.00500	0.0500	0.0535	107	0.0546	109	75-125	2	25	mg/kg	11.01.2019 10:08	
Iodomethane (Methyl Iodide)	<0.0200	0.0500	0.0406	81	0.0387	77	75-125	5	25	mg/kg	11.01.2019 10:08	
Isopropylbenzene	<0.00500	0.0500	0.0502	100	0.0499	100	75-125	1	25	mg/kg	11.01.2019 10:08	
m,p-Xylenes	<0.00200	0.100	0.0978	98	0.0973	97	75-125	1	25	mg/kg	11.01.2019 10:08	
Methylene Chloride	<0.0200	0.0500	0.0503	101	0.0482	96	75-125	4	25	mg/kg	11.01.2019 10:08	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641801

APS

APS MPG Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106167 Matrix: Solid Date Prep: 11.01.2019

MB Sample Id: 7689418-1-BLK LCS Sample Id: 7689418-1-BKS LCSD Sample Id: 7689418-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.00500	0.0500	0.0455	91	0.0452	90	60-140	1	25	mg/kg	11.01.2019 10:08	
Naphthalene	<0.0100	0.0500	0.0501	100	0.0525	105	70-130	5	25	mg/kg	11.01.2019 10:08	
n-Butylbenzene	<0.00500	0.0500	0.0515	103	0.0508	102	75-125	1	25	mg/kg	11.01.2019 10:08	
n-Propylbenzene	<0.00500	0.0500	0.0530	106	0.0531	106	75-125	0	25	mg/kg	11.01.2019 10:08	
o-Xylene	<0.00100	0.0500	0.0488	98	0.0482	96	75-125	1	25	mg/kg	11.01.2019 10:08	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0495	99	0.0499	100	75-125	1	25	mg/kg	11.01.2019 10:08	
Sec-Butylbenzene	<0.00500	0.0500	0.0518	104	0.0522	104	75-125	1	25	mg/kg	11.01.2019 10:08	
Styrene	<0.00500	0.0500	0.0491	98	0.0485	97	75-125	1	25	mg/kg	11.01.2019 10:08	
tert-Butylbenzene	<0.00500	0.0500	0.0562	112	0.0566	113	75-125	1	25	mg/kg	11.01.2019 10:08	
Tetrachloroethylene	<0.00500	0.0500	0.0513	103	0.0517	103	71-125	1	25	mg/kg	11.01.2019 10:08	
Toluene	<0.00500	0.0500	0.0471	94	0.0473	95	59-139	0	25	mg/kg	11.01.2019 10:08	
trans-1,2-dichloroethene	<0.00500	0.0500	0.0484	97	0.0476	95	75-125	2	25	mg/kg	11.01.2019 10:08	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0506	101	0.0506	101	66-125	0	25	mg/kg	11.01.2019 10:08	
Trichloroethene	<0.00500	0.0500	0.0450	90	0.0446	89	62-137	1	25	mg/kg	11.01.2019 10:08	
Trichlorofluoromethane	<0.00500	0.0500	0.0491	98	0.0453	91	67-125	8	25	mg/kg	11.01.2019 10:08	
Vinyl Acetate	<0.0100	0.250	0.208	83	0.203	81	60-140	2	25	mg/kg	11.01.2019 10:08	
Vinyl Chloride	<0.00500	0.0500	0.0483	97	0.0472	94	60-140	2	25	mg/kg	11.01.2019 10:08	
1,3-Butadiene	<0.00500	0.0500	0.0575	115	0.0557	111	70-130	3	25	mg/kg	11.01.2019 10:08	
Cyclohexane	<0.00500	0.0500	0.0504	101	0.0488	98	70-130	3	25	mg/kg	11.01.2019 10:08	
Dicyclopentadiene	<0.00500	0.0500	0.0461	92	0.0468	94	70-120	2	25	mg/kg	11.01.2019 10:08	
Methylcyclohexane	<0.0100	0.0500	0.0515	103	0.0507	101	65-135	2	25	mg/kg	11.01.2019 10:08	
n-Hexane	<0.0100	0.0500	0.0483	97	0.0464	93	72-125	4	25	mg/kg	11.01.2019 10:08	
4-Ethyltoluene	<0.00500	0.0500	0.0527	105	0.0525	105	70-130	0	25	mg/kg	11.01.2019 10:08	
Propene	<0.00500	0.0500	0.0357	71	0.0351	70	70-130	2	25	mg/kg	11.01.2019 10:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	96		99		97		53-142	%	11.01.2019 10:08
1,2-Dichloroethane-D4	99		99		101		56-150	%	11.01.2019 10:08
Toluene-D8	104		99		100		70-130	%	11.01.2019 10:08
4-Bromofluorobenzene	97		100		103		68-152	%	11.01.2019 10:08

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MPG Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A
Seq Number: 3106167 Matrix: Solid Date Prep: 11.01.2019
Parent Sample Id: 641658-002 MS Sample Id: 641658-002 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00501	0.0501	0.0423	84	72-125	mg/kg	11.01.2019 14:31	
1,1,1-Trichloroethane	<0.00501	0.0501	0.0408	81	75-125	mg/kg	11.01.2019 14:31	
1,1,2,2-Tetrachloroethane	<0.00501	0.0501	0.0461	92	74-125	mg/kg	11.01.2019 14:31	
1,1,2-Trichloroethane	<0.00501	0.0501	0.0428	85	75-127	mg/kg	11.01.2019 14:31	
1,1-Dichloroethane	<0.00501	0.0501	0.0445	89	72-125	mg/kg	11.01.2019 14:31	
1,1-Dichloroethene	<0.00501	0.0501	0.0432	86	59-172	mg/kg	11.01.2019 14:31	
1,1-Dichloropropene	<0.00501	0.0501	0.0432	86	75-125	mg/kg	11.01.2019 14:31	
1,2,3-Trichlorobenzene	<0.00501	0.0501	0.0376	75	75-137	mg/kg	11.01.2019 14:31	
1,2,3-Trichloropropane	<0.00501	0.0501	0.0435	87	75-125	mg/kg	11.01.2019 14:31	
1,2,4-Trichlorobenzene	<0.00501	0.0501	0.0396	79	75-135	mg/kg	11.01.2019 14:31	
1,2,4-Trimethylbenzene	<0.00501	0.0501	0.0409	82	75-125	mg/kg	11.01.2019 14:31	
1,2-Dibromo-3-Chloropropane	<0.00501	0.0501	0.0432	86	59-125	mg/kg	11.01.2019 14:31	
1,2-Dibromoethane	<0.00501	0.0501	0.0419	84	73-125	mg/kg	11.01.2019 14:31	
1,2-Dichlorobenzene	<0.00501	0.0501	0.0419	84	75-125	mg/kg	11.01.2019 14:31	
1,2-Dichloroethane	<0.00501	0.0501	0.0414	83	68-127	mg/kg	11.01.2019 14:31	
1,2-Dichloropropane	<0.00501	0.0501	0.0415	83	74-125	mg/kg	11.01.2019 14:31	
1,3,5-Trimethylbenzene	<0.00501	0.0501	0.0447	89	70-130	mg/kg	11.01.2019 14:31	
1,3-Dichlorobenzene	<0.00501	0.0501	0.0407	81	75-125	mg/kg	11.01.2019 14:31	
1,3-Dichloropropane	<0.00501	0.0501	0.0432	86	75-125	mg/kg	11.01.2019 14:31	
1,4-Dichlorobenzene	<0.00501	0.0501	0.0403	80	75-125	mg/kg	11.01.2019 14:31	
2,2-Dichloropropane	<0.00501	0.0501	0.0425	85	75-125	mg/kg	11.01.2019 14:31	
2-Butanone	<0.0200	0.251	0.176	70	75-125	mg/kg	11.01.2019 14:31	X
2-Chlorotoluene	<0.00501	0.0501	0.0429	86	73-125	mg/kg	11.01.2019 14:31	
2-Hexanone	<0.0501	0.251	0.185	74	75-125	mg/kg	11.01.2019 14:31	X
4-Chlorotoluene	<0.00501	0.0501	0.0416	83	74-125	mg/kg	11.01.2019 14:31	
4-Methyl-2-Pentanone	<0.0501	0.251	0.202	80	60-140	mg/kg	11.01.2019 14:31	
Acetone	<0.100	0.251	0.144	57	50-150	mg/kg	11.01.2019 14:31	
Benzene	<0.00100	0.0501	0.0407	81	66-142	mg/kg	11.01.2019 14:31	
Bromobenzene	<0.00501	0.0501	0.0424	85	75-125	mg/kg	11.01.2019 14:31	
Bromochloromethane	<0.00501	0.0501	0.0431	86	60-140	mg/kg	11.01.2019 14:31	
Bromodichloromethane	<0.00501	0.0501	0.0406	81	75-125	mg/kg	11.01.2019 14:31	
Bromoform	<0.00501	0.0501	0.0419	84	75-125	mg/kg	11.01.2019 14:31	
Bromomethane	<0.00501	0.0501	0.0430	86	60-140	mg/kg	11.01.2019 14:31	
Carbon Disulfide	<0.00501	0.0501	0.0444	89	60-140	mg/kg	11.01.2019 14:31	
Carbon Tetrachloride	<0.00501	0.0501	0.0426	85	62-125	mg/kg	11.01.2019 14:31	
Chlorobenzene	<0.00501	0.0501	0.0401	80	60-133	mg/kg	11.01.2019 14:31	
Chloroethane	<0.0100	0.0501	0.0420	84	60-140	mg/kg	11.01.2019 14:31	
Chloroform	<0.00501	0.0501	0.0422	84	74-125	mg/kg	11.01.2019 14:31	
Chloromethane	<0.00501	0.0501	0.0504	101	60-140	mg/kg	11.01.2019 14:31	
cis-1,2-Dichloroethene	<0.00501	0.0501	0.0422	84	75-125	mg/kg	11.01.2019 14:31	
cis-1,3-Dichloropropene	<0.00501	0.0501	0.0417	83	74-125	mg/kg	11.01.2019 14:31	
Dibromochloromethane	<0.00501	0.0501	0.0416	83	73-125	mg/kg	11.01.2019 14:31	
Dibromomethane	<0.00501	0.0501	0.0423	84	69-127	mg/kg	11.01.2019 14:31	
Dichlorodifluoromethane	<0.00501	0.0501	0.0653	130	65-135	mg/kg	11.01.2019 14:31	
Ethylbenzene	<0.00100	0.0501	0.0395	79	75-125	mg/kg	11.01.2019 14:31	
Hexachlorobutadiene	<0.00501	0.0501	0.0416	83	75-125	mg/kg	11.01.2019 14:31	
Iodomethane (Methyl Iodide)	<0.0200	0.0501	0.0354	71	75-125	mg/kg	11.01.2019 14:31	X
Isopropylbenzene	<0.00501	0.0501	0.0411	82	75-125	mg/kg	11.01.2019 14:31	
m,p-Xylenes	<0.00200	0.100	0.0789	79	75-125	mg/kg	11.01.2019 14:31	
Methylene Chloride	<0.00423	0.0501	0.0506	101	75-125	mg/kg	11.01.2019 14:31	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 641801

APS

APS MPG Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A
Seq Number: 3106167 Matrix: Solid Date Prep: 11.01.2019
Parent Sample Id: 641658-002 MS Sample Id: 641658-002 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
MTBE	<0.00501	0.0501	0.0436	87	60-140	mg/kg	11.01.2019 14:31	
Naphthalene	<0.0100	0.0501	0.0405	81	70-130	mg/kg	11.01.2019 14:31	
n-Butylbenzene	<0.00501	0.0501	0.0412	82	75-125	mg/kg	11.01.2019 14:31	
n-Propylbenzene	<0.00501	0.0501	0.0429	86	75-125	mg/kg	11.01.2019 14:31	
o-Xylene	<0.00100	0.0501	0.0414	83	75-125	mg/kg	11.01.2019 14:31	
p-Cymene (p-Isopropyltoluene)	<0.00501	0.0501	0.0404	81	75-125	mg/kg	11.01.2019 14:31	
Sec-Butylbenzene	<0.00501	0.0501	0.0422	84	75-125	mg/kg	11.01.2019 14:31	
Styrene	<0.00501	0.0501	0.0401	80	75-125	mg/kg	11.01.2019 14:31	
tert-Butylbenzene	<0.00501	0.0501	0.0465	93	75-125	mg/kg	11.01.2019 14:31	
Tetrachloroethylene	<0.00501	0.0501	0.0411	82	71-125	mg/kg	11.01.2019 14:31	
Toluene	<0.00501	0.0501	0.0397	79	59-139	mg/kg	11.01.2019 14:31	
trans-1,2-dichloroethene	<0.00501	0.0501	0.0421	84	75-125	mg/kg	11.01.2019 14:31	
trans-1,3-dichloropropene	<0.00501	0.0501	0.0418	83	66-125	mg/kg	11.01.2019 14:31	
Trichloroethene	<0.00501	0.0501	0.0363	72	62-137	mg/kg	11.01.2019 14:31	
Trichlorofluoromethane	<0.00501	0.0501	0.0463	92	67-125	mg/kg	11.01.2019 14:31	
Vinyl Acetate	<0.0100	0.251	0.0907	36	60-140	mg/kg	11.01.2019 14:31	X
Vinyl Chloride	<0.00501	0.0501	0.0503	100	60-140	mg/kg	11.01.2019 14:31	
1,3-Butadiene	<0.00501	0.0501	0.0510	102	70-130	mg/kg	11.01.2019 14:31	
Cyclohexane	<0.00501	0.0501	0.0412	82	70-130	mg/kg	11.01.2019 14:31	
Dicyclopentadiene	<0.00501	0.0501	0.0390	78	70-120	mg/kg	11.01.2019 14:31	
Methylcyclohexane	<0.0100	0.0501	0.0414	83	65-135	mg/kg	11.01.2019 14:31	
n-Hexane	<0.0100	0.0501	0.0363	72	72-125	mg/kg	11.01.2019 14:31	
4-Ethyltoluene	<0.00501	0.0501	0.0424	85	70-130	mg/kg	11.01.2019 14:31	
Propene	<0.00501	0.0501	0.0315	63	70-130	mg/kg	11.01.2019 14:31	X

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
Dibromofluoromethane	104		53-142	%	11.01.2019 14:31
1,2-Dichloroethane-D4	102		56-150	%	11.01.2019 14:31
Toluene-D8	101		70-130	%	11.01.2019 14:31
4-Bromofluorobenzene	102		68-152	%	11.01.2019 14:31

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Chain of Custody

XENCO LABORATORIES

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Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: 041801

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259	Email:	Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST☐ PRP☐ Brownfields☐ RR☐ Superfun☐

State of Project: Arizona

Reporting: Level II ☒ Level III☐ PST/UST☐ TRRP☐ Level IV☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine	☒
P.O. Number:	700735632	Rush:	X 48hr
Sampler's Name:	A. Shwartz, M. Branche	Due Date:	

SAMPLE RECEIPT	Temp Blank: Yes No	Wet Ice: Yes No
Temperature (°C):		Thermometer ID
Received Intact:	Yes No	IR ID:HOU-068 C/F:+0.2
Cooler Custody Seals:	Yes No N/A	Temp: 2.0 Corrected: 2.2
Sample Custody Seals:	Yes No N/A	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B16-7.5-8.0	S	10-29-19	1040	7.5-8.0	3	X	X	X						
D-B16-10.0-10.5	S		1050	10.0-10.5	3	X	X	X						~~MS/MSD~~ PKO 11.01.19
D-B16-15.0-15.5	S		1200	15.0-15.5	5	X	X	X						
D-FD02-102919	S		1215	—	3	X	X	X						
D-B16-19.5'-20.0	S		1220	19.5-20	3	X	X	X						
D-B28-5.0-5.5'	S		1245	5.0-5.5	4	X	X	X	X	X	X	X	X	
D-FD03-102919	S		1255	—	4	X	X	X	X	X	X	X	X	
D-B14-7.5-8.0	S		1310	7.5-8.0	1	X	X							
D-B14-10.0-10.5	S		1315	10.0-10.5	1	X	X							
D-B14-15.0-15.5	S		1345	15.0-15.5	1	X	X							

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature]	Fed Ex	10-31-19:1300	2 Fed Ex	[signature]	11.1.19 09:30
3			4		
5			6		

Revised Date 051418 Rev 2018 1

Chain of Custody

XENCO LABORATORIES

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Work Order No: 604.1801

Page 2 of 5

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259	Email:	Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine	☒
P.O. Number:	700735632	Rush:	X 48hr
Sampler's Name:	A. Shuntz, M. Branche	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes No	Wet Ice:	Yes No
Temperature (°C):		Thermometer ID		
Received Intact:	Yes No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	Yes No N/A	Temp: 2.0	Corrected: 2.2	
Sample Custody Seals:	Yes No N/A	Total Containers:		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide
D-B14-19.5-20.0	S	10-29-19	1355	19.5-20'	1	X	X						
D-B22-5.0-5.5	S		1435	5.0-5.5	1	X	X						
D-B22-7.5-8.0	S		1450	7.5-8.0	1	X	X						
~~D-B28-10.0-10.5~~	S		1555	10.0-10.5	1	X	X			RKO 11.01.19			
~~D-B28-10.0-10.5~~ (MS/MSD)	S		1455	10.0-10.5	1	X	X			D-TB01-102919			
~~D-B22~~-15.0-15.5	S		1510	15.0-15.5	1	X	X			RKO 11.01.19			
D-B28-10.0-10.5	S		1555	10.0-10.5	1	X	X						
D-B~~22~~-15.0-15.5	S		1615	15.0-15.5	1	X	X						
D-B28-19.5-20.0	S		1625	19.5-20	1	X	X						
D-B22-10.0-10.5	S		1455	10.0-10.5									

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

ON HOLD
trip blank
SD-B22 15.0-15.5
MS/MSD

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010:** 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	FED EX	10-31-19 1300	2 FED EX		11.1.19 09.30
3			4		
5			6		

Revised Date 051418 Rev 2018.1

Final 1.003
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Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
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Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Work Order No: 641801

Page 3 of 5

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259	Email:	Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST☐ PRP☐ Brownfields☐ RR☐ Superfur☐

State of Project: Arizona

Reporting: Level II [X] Level III☐ PST/UST☐ TRRP☐ Level IV☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine	☒
P.O. Number:	700735632	Rush:	X 48hr
Sampler's Name:	A.Shwartz, M.Branche	Due Date:	

SAMPLE RECEIPT	Temp Blank: Yes No	Wet Ice: Yes No
Temperature (°C):		Thermometer ID
Received Intact:	Yes No	IR ID:HOU-068 C/F:+0.2
Cooler Custody Seals:	Yes No N/A	Temp: 2.0 Corrected: 2.2
Sample Custody Seals:	Yes No N/A	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B11-1.0-1.5'	S	10-30-19	0915	1.0-1.5'	4	X	X	X	X	X	X	X	X	
D-B11-2.5-3.0	S		0930	2.5-3.0	3	X	X	X						
D-B11-5.0-5.5	S		0945	5.0-5.5	1	X	X							
D-B11-7.5-8.0	S		0950	7.5-8.0	1	X	X							
D-B11-10.0-10.5	S		0955	10.0-10.5	1	X	X							
D-B20-2.5-3.0	S		1000	2.5-3.0	1	X	X							MS/MSD
D-B11-15.0-15.5	S		1005	15.0-15.5	1	X	X							
D-B11-19.5-20.0	S		1020	19.5-20	1	X	X							
D-B20-5.0-5.5	S		1035	5.0-5.5	1	X	X							
D-B17-2.5-3.0	S		1050	2.5-3.0	1	X	X							

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature]	Fed Ex	10-31-19 5:13:00	2 Fed Ex	[signature]	11.1.19 09:30
3			4		
5			6		

Revised Date 051418 Rev 2018 1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 11.01.2019 09.30.00 AM

Work Order #: 641801

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**No**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**Yes**	2 extra MEOH vials with no sample label ID. Extra 8oz. jar, Sample Point 2 designated MS/MSD. Duplicated sample ID on COC no containers for sample point D-B28-10.05-10.5 collected at 15:55 line item 4 on pg 2 of 5 COC.
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: LM PH Device/Lot#:

Checklist completed by: Lesia Minor Date: 11.01.2019

Lesia Minor

Checklist reviewed by: Ruriko Konuma Date: 11.01.2019

Ruriko Konuma

Analytical Report 641882

for

APS

Project Manager: Judy Heywood

APS MPG Douglas, AZ

D3118600.A.CS.EV.DG.05-1B

11.21.2019

Collected By: Client

4147 Greenbriar Dr.
Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

11.21.2019

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: XENCO Report No(s): **641882**
APS MPG Douglas, AZ
Project Address: Miami, AZ

Judy Heywood:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 641882. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 641882 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ruriko Konuma
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

CASE NARRATIVE

Client Name: APS

Project Name: APS MPG Douglas, AZ

Project ID: *D3118600.A.CS.EV.DG.0*
Work Order Number(s): *641882*

Report Date: *11.21.2019*
Date Received: *11.04.2019*

Sample receipt non conformances and comments:

Revised report due to TCLP Metals Analysis added to sample ID: D-B12-7.5-8.0 sample Work Order number 641882-016 Analysis requested by Matthew Branche via email on 11/17/2019 @ 12:02pm

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106377 Volatiles by SW 8260C
Sample required dilution due to high concentration of target analyte.

Batch: LBA-3106445 PCBs by SW 8082A
Surrogate Decachlorobiphenyl recovered above QC limits. Surrogate high due to matrix interference. Samples affected are: 641882-004 S,641882-015,641882-012,641882-004,641882-014.

Batch: LBA-3106468 Metals, RCRA List, by SW 6020
Lab Sample ID 641882-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Barium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641882-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -012, -013, -014, -015, -016, -017, -018, -019.
The Laboratory Control Sample for Barium is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106513 PAHs by 8270D SIM

Lab Sample ID 641882-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Acenaphthene recovered below QC limits in the Matrix Spike. Acenaphthylene, Anthracene, Benzo(a)anthracene , Benzo(a)pyrene , Benzo(b)fluoranthene , Benzo(g,h,i)perylene , Benzo(k)fluoranthene , Chrysene, Dibenz(a,h)Anthracene , Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene , Naphthalene, Phenanthrene recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Acenaphthene recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641882-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -012, -013, -014, -015, -016, -017, -018, -019.

The Laboratory Control Sample for Anthracene, Acenaphthylene, Benzo(k)fluoranthene , Chrysene, Dibenz(a,h)Anthracene , Naphthalene, Pyrene, Benzo(a)pyrene , Benzo(b)fluoranthene , Fluoranthene, Acenaphthene, Benzo(a)anthracene , Indeno(1,2,3-c,d)Pyrene , Benzo(g,h,i)perylene , Fluorene, Phenanthrene is within laboratory Control Limits, therefore the data was accepted.

Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene , Benzo(a)pyrene , Benzo(b)fluoranthene , Benzo(g,h,i)perylene , Benzo(k)fluoranthene , Chrysene, Dibenz(a,h)Anthracene , Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene , Naphthalene, Phenanthrene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 641882-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -012, -013, -014, -015, -016, -017, -018, -019

Surrogate 2-Fluorobiphenyl recovered above QC limits. Matrix interferences is suspected;
Samples affected are: 641882-003.
Surrogate Terphenyl-D14 recovered above QC limits. Matrix interferences is suspected;
Samples affected are: 641882-003,641882-004 S,641882-004 SD,641882-016.
Sample 641882-004 were diluted due to the dark and viscous nature of the samples.
Samples in work order 641882 were run at dilution due to the dark and viscous nature of the samples.

Batch: LBA-3106537 Metals, RCRA List, by SW 6020

Lab Sample ID 641882-034 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Barium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641882-020, -021, -022, -023, -024, -025, -026, -027, -028, -031, -033, -034, -035.

The Laboratory Control Sample for Barium is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106545 Total Cyanide by SW 9012

Lab Sample ID 641882-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Cyanide, Total recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641882-004, -012, -014, -015.
The Laboratory Control Sample for Cyanide, Total is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106591 PAHs by 8270D SIM

Phenanthrene Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 641882-020, -021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035

Lab Sample ID 641882-034 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzo(a)anthracene , Benzo(a)pyrene , Benzo(b)fluoranthene , Benzo(g,h,i)perylene , Chrysene, Fluoranthene, Indeno(1,2,3-c,d)Pyrene , Phenanthrene recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641882-020, -021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035.
The Laboratory Control Sample for Chrysene, Pyrene, Benzo(a)pyrene , Benzo(b)fluoranthene , Fluoranthene, Benzo(a)anthracene , Indeno(1,2,3-c,d)Pyrene , Benzo(g,h,i)perylene , Phenanthrene is within laboratory Control Limits, therefore the data was accepted.

Flagging Criteria

Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Sample Cross Reference 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-B24-19.5-20.0	S	10.30.2019 15:55	19.5 - 20 ft	641882-001
D-FD01-103019	S	10.30.2019 16:00		641882-002
D-B13-1.0-1.5	S	10.31.2019 07:50	1.0 - 1.5 ft	641882-003
D-B13-2.5-3.0	S	10.31.2019 08:10	2.5 - 3.0 ft	641882-004
D-B13-5.0-5.5	S	10.31.2019 09:10	5.0 - 5.5 ft	641882-005
D-B13-7.5-8.0	S	10.31.2019 09:25	7.5 - 8 ft	641882-006
D-B13-10.0-10.5	S	10.31.2019 09:35	10 - 10.5 ft	641882-007
D-B13-15.0-15.5	S	10.31.2019 09:45	15 - 15.5 ft	641882-008
D-FD01-103119	S	10.31.2019 09:50		641882-009
D-B13-19.5-20.0	S	10.31.2019 09:55	19.5 - 20 ft	641882-010
D-TB01-103119	S	10.31.2019 08:00		641882-011
D-B12-1.0-1.5	S	10.31.2019 11:15	1.0 - 1.5 ft	641882-012
D-B12-2.5-3.0	S	10.31.2019 11:25	2.5 - 3.0 ft	641882-013
D-B12-5.0-5.5	S	10.31.2019 11:35	5.0 - 5.5 ft	641882-014
D-FD02-103119	S	10.31.2019 11:40		641882-015
D-B12-7.5-8.0	S	10.31.2019 11:45	7.5 - 8.0 ft	641882-016
D-B12-10.0-10.5	S	10.31.2019 11:50	10 - 10.5 ft	641882-017
D-B12-15.0-15.5	S	10.31.2019 11:55	15 - 15.5 ft	641882-018
D-B12-19.5-20	S	10.31.2019 12:15	19.5 - 20 ft	641882-019
D-B12-24.5-25.0	S	10.31.2019 13:50	24.5 - 25 ft	641882-020
D-B23-25-3.0	S	10.31.2019 14:35	2.5 - 3.0 ft	641882-021
D-FD03-103119	S	10.31.2019 14:45		641882-022
D-B23-5.0-5.5	S	10.31.2019 15:05	5.0 - 5.5 ft	641882-023
D-B23-7.5-8.0	S	10.31.2019 15:30	7.5 - 8.0 ft	641882-024
D-B23-9.5-10.0	S	10.31.2019 15:50	9.5 - 10.0 ft	641882-025
D-B23-14.5-15.0	S	10.31.2019 16:10	14.5 - 15.0 ft	641882-026
D-B23-19.5-20.0	S	10.31.2019 16:30	19.5 - 20.0 ft	641882-027
D-B25-10.0-10.5	S	10.31.2019 09:30	10.0 - 10.5 ft	641882-028
D-B25-15.0-15.5	S	10.31.2019 10:50	15.0 - 15.5 ft	641882-029
D-B25-20.0-20.5	S	10.31.2019 11:25	20.0 - 20.5 ft	641882-030
D-B25-25.0-25.5	S	10.31.2019 11:45	25.0 - 25.5 ft	641882-031
D-B25-30.0-30.5	S	10.31.2019 13:20	30.0 - 30.5 ft	641882-032
D-B25-40.0-40.5	S	10.31.2019 16:20	40.0 - 40.5 ft	641882-033
D-FD04-103119	S	10.31.2019 17:00		641882-034
D-B24-10.0-10.5	S	10.30.2019 15:40	10 - 10.5 ft	641882-035

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B24-19.5-20.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-001
Date Collected: 10.30.2019 15:55
Sample Depth: 19.5 - 20 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0179	mg/kg	11.05.2019 12:52	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.55**	1.85	mg/kg	11.05.2019 12:06		10
Barium	7440-39-3	**43.7**	3.70	mg/kg	11.05.2019 12:06		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 12:06	U	10
Chromium	7440-47-3	**19.5**	3.70	mg/kg	11.05.2019 12:06		10
Lead	7439-92-1	**10.5**	1.85	mg/kg	11.05.2019 12:06		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 12:06	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 12:06	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B24-19.5-20.0**
Lab Sample Id: 641882-001

Matrix: Soil
Date Collected: 10.30.2019 15:55

Date Received:11.04.2019 09:30
Sample Depth: 19.5 - 20 ft

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 07:39

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00198**	0.00167	mg/kg	11.05.2019 14:16		1
Acenaphthylene	208-96-8	**0.0382**	0.00167	mg/kg	11.05.2019 14:16		1
Anthracene	120-12-7	**0.0180**	0.00167	mg/kg	11.05.2019 14:16		1
Benzo(a)anthracene	56-55-3	**0.0411**	0.00167	mg/kg	11.05.2019 14:16		1
Benzo(a)pyrene	50-32-8	**0.0818**	0.00167	mg/kg	11.05.2019 14:16		1
Benzo(b)fluoranthene	205-99-2	**0.0813**	0.00167	mg/kg	11.05.2019 14:16		1
Benzo(g,h,i)perylene	191-24-2	**0.104**	0.00167	mg/kg	11.05.2019 14:16		1
Benzo(k)fluoranthene	207-08-9	**0.0239**	0.00167	mg/kg	11.05.2019 14:16		1
Chrysene	218-01-9	**0.0506**	0.00167	mg/kg	11.05.2019 14:16		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.05.2019 14:16	U	1
Fluoranthene	206-44-0	**0.181**	0.00167	mg/kg	11.05.2019 14:16		1
Fluorene	86-73-7	**0.00825**	0.00167	mg/kg	11.05.2019 14:16		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0649**	0.00167	mg/kg	11.05.2019 14:16		1
Naphthalene	91-20-3	**0.0215**	0.0167	mg/kg	11.05.2019 14:16		1
Phenanthrene	85-01-8	**0.145**	0.00167	mg/kg	11.05.2019 14:16		1
Pyrene	129-00-0	**0.215**	0.00167	mg/kg	11.05.2019 14:16		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	102	%	31-130	11.05.2019 14:16	
2-Fluorobiphenyl	103	%	51-133	11.05.2019 14:16	
Terphenyl-D14	108	%	46-137	11.05.2019 14:16	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD01-103019**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-002
Date Collected: 10.30.2019 16:00

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.05.2019 12:54	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.20**	1.69	mg/kg	11.05.2019 12:09		10
Barium	7440-39-3	**46.1**	3.39	mg/kg	11.05.2019 12:09		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.05.2019 12:09	U	10
Chromium	7440-47-3	**17.4**	3.39	mg/kg	11.05.2019 12:09		10
Lead	7439-92-1	**22.3**	1.69	mg/kg	11.05.2019 12:09		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.05.2019 12:09	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.05.2019 12:09	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD01-103019**
Lab Sample Id: 641882-002

Matrix: Soil
Date Collected: 10.30.2019 16:00

Date Received:11.04.2019 09:30

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 07:42

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.05.2019 14:00	U	1
Acenaphthylene	208-96-8	**0.0103**	0.00167	mg/kg	11.05.2019 14:00		1
Anthracene	120-12-7	**0.00347**	0.00167	mg/kg	11.05.2019 14:00		1
Benzo(a)anthracene	56-55-3	**0.00975**	0.00167	mg/kg	11.05.2019 14:00		1
Benzo(a)pyrene	50-32-8	**0.0232**	0.00167	mg/kg	11.05.2019 14:00		1
Benzo(b)fluoranthene	205-99-2	**0.0237**	0.00167	mg/kg	11.05.2019 14:00		1
Benzo(g,h,i)perylene	191-24-2	**0.0322**	0.00167	mg/kg	11.05.2019 14:00		1
Benzo(k)fluoranthene	207-08-9	**0.00611**	0.00167	mg/kg	11.05.2019 14:00		1
Chrysene	218-01-9	**0.0131**	0.00167	mg/kg	11.05.2019 14:00		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.05.2019 14:00	U	1
Fluoranthene	206-44-0	**0.0471**	0.00167	mg/kg	11.05.2019 14:00		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.05.2019 14:00	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0202**	0.00167	mg/kg	11.05.2019 14:00		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.05.2019 14:00	U	1
Phenanthrene	85-01-8	**0.0327**	0.00167	mg/kg	11.05.2019 14:00		1
Pyrene	129-00-0	**0.0615**	0.00167	mg/kg	11.05.2019 14:00		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	106	%	31-130	11.05.2019 14:00	
2-Fluorobiphenyl	107	%	51-133	11.05.2019 14:00	
Terphenyl-D14	109	%	46-137	11.05.2019 14:00	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B13-1.0-1.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-003
Date Collected: 10.31.2019 07:50
Sample Depth: 1.0 - 1.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0427**	0.0185	mg/kg	11.05.2019 12:55		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.5**	1.67	mg/kg	11.05.2019 12:12		10
Barium	7440-39-3	**68.4**	3.33	mg/kg	11.05.2019 12:12		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.05.2019 12:12	U	10
Chromium	7440-47-3	**7.85**	3.33	mg/kg	11.05.2019 12:12		10
Lead	7439-92-1	**89.4**	1.67	mg/kg	11.05.2019 12:12		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.05.2019 12:12	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.05.2019 12:12	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B13-1.0-1.5**
Lab Sample Id: 641882-003

Matrix: Soil
Date Collected: 10.31.2019 07:50

Date Received:11.04.2019 09:30
Sample Depth: 1.0 - 1.5 ft

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 07:45

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.544**	0.0667	mg/kg	11.05.2019 14:33		20
Acenaphthylene	208-96-8	**14.2**	0.667	mg/kg	11.05.2019 20:12	D	200
Anthracene	120-12-7	**6.63**	0.0667	mg/kg	11.05.2019 14:33		20
Benzo(a)anthracene	56-55-3	**17.5**	0.667	mg/kg	11.05.2019 20:12	D	200
Benzo(a)pyrene	50-32-8	**28.9**	0.667	mg/kg	11.05.2019 20:12	D	200
Benzo(b)fluoranthene	205-99-2	**26.4**	0.667	mg/kg	11.05.2019 20:12	D	200
Benzo(g,h,i)perylene	191-24-2	**30.3**	0.667	mg/kg	11.05.2019 20:12	D	200
Benzo(k)fluoranthene	207-08-9	**7.09**	0.0667	mg/kg	11.05.2019 14:33		20
Chrysene	218-01-9	**20.7**	0.667	mg/kg	11.05.2019 20:12	D	200
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0667	mg/kg	11.05.2019 14:33	U	20
Fluoranthene	206-44-0	**71.0**	0.667	mg/kg	11.05.2019 20:12	D	200
Fluorene	86-73-7	**4.49**	0.0667	mg/kg	11.05.2019 14:33		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**21.5**	0.667	mg/kg	11.05.2019 20:12	D	200
Naphthalene	91-20-3	**35.9**	6.67	mg/kg	11.05.2019 20:12	D	200
Phenanthrene	85-01-8	**70.8**	0.667	mg/kg	11.05.2019 20:12	D	200
Pyrene	129-00-0	**83.6**	0.667	mg/kg	11.05.2019 20:12	D	200

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	123	%	31-130	11.05.2019 14:33	
2-Fluorobiphenyl	216	%	51-133	11.05.2019 14:33	**
Terphenyl-D14	446	%	46-137	11.05.2019 14:33	**

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B13-1.0-1.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-003	Date Collected:	10.31.2019 07:50	Sample Depth:	1.0 - 1.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,1-Dichloroethane	75-34-3	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,1-Dichloroethene	75-35-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,1-Dichloropropene	563-58-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2-Dibromoethane	106-93-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2-Dichloroethane	107-06-2	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,2-Dichloropropane	78-87-5	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,3-Dichloropropane	142-28-9	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
2,2-Dichloropropane	594-20-7	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
2-Butanone	78-93-3	BRL	1.15	mg/kg	11.04.2019 21:11	U	50
2-Chlorotoluene	95-49-8	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
2-Hexanone	591-78-6	BRL	2.89	mg/kg	11.04.2019 21:11	U	50
4-Chlorotoluene	106-43-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.89	mg/kg	11.04.2019 21:11	U	50
Acetone	67-64-1	BRL	5.77	mg/kg	11.04.2019 21:11	U	50
Benzene	71-43-2	**0.509**	0.0577	mg/kg	11.04.2019 21:11		50
Bromobenzene	108-86-1	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Bromochloromethane	74-97-5	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Bromodichloromethane	75-27-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Bromoform	75-25-2	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Bromomethane	74-83-9	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Carbon Disulfide	75-15-0	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Carbon Tetrachloride	56-23-5	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Chlorobenzene	108-90-7	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Chloroethane	75-00-3	BRL	0.577	mg/kg	11.04.2019 21:11	U	50
Chloroform	67-66-3	BRL	0.289	mg/kg	11.04.2019 21:11	U	50

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B13-1.0-1.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-003	Date Collected:	10.31.2019 07:50	Sample Depth:	1.0 - 1.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Dibromochloromethane	124-48-1	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Dibromomethane	74-95-3	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Ethylbenzene	100-41-4	BRL	0.0577	mg/kg	11.04.2019 21:11	U	50
Hexachlorobutadiene	87-68-3	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.15	mg/kg	11.04.2019 21:11	U	50
Isopropylbenzene	98-82-8	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
m,p-Xylenes	179601-23-1	**0.197**	0.115	mg/kg	11.04.2019 21:11		50
Methylene Chloride	75-09-2	BRL	1.15	mg/kg	11.04.2019 21:11	U	50
MTBE	1634-04-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Naphthalene	91-20-3	**28.3**	2.31	mg/kg	11.04.2019 21:32	D	200
n-Butylbenzene	104-51-8	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
n-Propylbenzene	103-65-1	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
o-Xylene	95-47-6	**0.133**	0.0577	mg/kg	11.04.2019 21:11		50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Sec-Butylbenzene	135-98-8	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Styrene	100-42-5	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
tert-Butylbenzene	98-06-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Tetrachloroethylene	127-18-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Toluene	108-88-3	**0.380**	0.289	mg/kg	11.04.2019 21:11		50
Total Xylenes	1330-20-7	**0.330**	0.0577	mg/kg	11.04.2019 21:11		50
trans-1,2-dichloroethene	156-60-5	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Trichloroethene	79-01-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Trichlorofluoromethane	75-69-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Vinyl Acetate	108-05-4	BRL	0.577	mg/kg	11.04.2019 21:11	U	50
Vinyl Chloride	75-01-4	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
1,3-Butadiene	106-99-0	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Cyclohexane	110-82-7	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Dicyclopentadiene	77-73-6	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Methylcyclohexane	108-87-2	BRL	0.577	mg/kg	11.04.2019 21:11	U	50
n-Hexane	110-54-3	BRL	0.577	mg/kg	11.04.2019 21:11	U	50
4-Ethyltoluene	622-96-8	BRL	0.289	mg/kg	11.04.2019 21:11	U	50
Propene	115-07-1	BRL	0.289	mg/kg	11.04.2019 21:11	U	50

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B13-1.0-1.5**
Lab Sample Id: 641882-003

Matrix: Soil
Date Collected: 10.31.2019 07:50

Date Received:11.04.2019 09:30
Sample Depth: 1.0 - 1.5 ft

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	91	%	53-142	11.04.2019 21:11	
1,2-Dichloroethane-D4	100	%	56-150	11.04.2019 21:11	
Toluene-D8	102	%	70-130	11.04.2019 21:11	
4-Bromofluorobenzene	97	%	68-152	11.04.2019 21:11	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B13-2.5-3.0** Matrix: Soil Date Received:11.04.2019 09:30
Lab Sample Id: 641882-004 Date Collected: 10.31.2019 08:10 Sample Depth: 2.5 - 3.0 ft

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.05.2019 13:00 Basis: Wet Weight
Seq Number: 3106545 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.0668**	0.0532	mg/kg	11.05.2019 15:22		1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.05.2019 09:40 Basis: Wet Weight
Seq Number: 3106489 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.05.2019 12:39	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture: 0
Analyst: DEP Date Prep: 11.05.2019 10:00 Basis: Dry Weight
Seq Number: 3106468 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**18.9**	2.00	mg/kg	11.05.2019 11:46		10
Barium	7440-39-3	**540**	4.00	mg/kg	11.05.2019 11:46		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.05.2019 11:46	U	10
Chromium	7440-47-3	**12.9**	4.00	mg/kg	11.05.2019 11:46		10
Lead	7439-92-1	**17.9**	2.00	mg/kg	11.05.2019 11:46		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.05.2019 11:46	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.05.2019 11:46	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B13-2.5-3.0** Matrix: Soil Date Received:11.04.2019 09:30

Lab Sample Id: 641882-004 Date Collected: 10.31.2019 08:10 Sample Depth: 2.5 - 3.0 ft

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106491

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.05.2019 11:52		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.2019 13:30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.84**		SU	11.04.2019 12:44		1
Temperature	TEMP	**24.9**		Deg C	11.04.2019 12:44	+	1

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B13-2.5-3.0**
Lab Sample Id: 641882-004

Matrix: Soil
Date Collected: 10.31.2019 08:10

Date Received:11.04.2019 09:30
Sample Depth: 2.5 - 3.0 ft

Analytical Method: PCBs by SW 8082A
Tech: JOZ
Analyst: SHM
Seq Number: 3106445

Date Prep: 11.04.2019 11:24

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0333	mg/kg	11.05.2019 12:56	U	2
PCB-1221	11104-28-2	BRL	0.0333	mg/kg	11.05.2019 12:56	U	2
PCB-1232	11141-16-5	BRL	0.0333	mg/kg	11.05.2019 12:56	U	2
PCB-1242	53469-21-9	BRL	0.0333	mg/kg	11.05.2019 12:56	U	2
PCB-1248	12672-29-6	BRL	0.0333	mg/kg	11.05.2019 12:56	U	2
PCB-1254	11097-69-1	BRL	0.0333	mg/kg	11.05.2019 12:56	U	2
PCB-1260	11096-82-5	BRL	0.0333	mg/kg	11.05.2019 12:56	U	2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	188	%	39-125	11.05.2019 12:56	**
Tetrachloro-m-xylene	78	%	37-124	11.05.2019 12:56	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B13-2.5-3.0**
Lab Sample Id: 641882-004

Matrix: Soil
Date Collected: 10.31.2019 08:10

Date Received:11.04.2019 09:30
Sample Depth: 2.5 - 3.0 ft

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 07:48

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.955**	0.333	mg/kg	11.05.2019 13:10		200
Acenaphthylene	208-96-8	**10.9**	0.333	mg/kg	11.05.2019 13:10		200
Anthracene	120-12-7	**4.88**	0.333	mg/kg	11.05.2019 13:10		200
Benzo(a)anthracene	56-55-3	**7.25**	0.333	mg/kg	11.05.2019 13:10		200
Benzo(a)pyrene	50-32-8	**9.99**	0.333	mg/kg	11.05.2019 13:10		200
Benzo(b)fluoranthene	205-99-2	**10.0**	0.333	mg/kg	11.05.2019 13:10		200
Benzo(g,h,i)perylene	191-24-2	**8.37**	0.333	mg/kg	11.05.2019 13:10		200
Benzo(k)fluoranthene	207-08-9	**2.73**	0.333	mg/kg	11.05.2019 13:10		200
Chrysene	218-01-9	**7.71**	0.333	mg/kg	11.05.2019 13:10		200
Dibenz(a,h)Anthracene	53-70-3	BRL	0.333	mg/kg	11.05.2019 13:10	U	200
Fluoranthene	206-44-0	**28.3**	0.333	mg/kg	11.05.2019 13:10		200
Fluorene	86-73-7	**5.82**	0.333	mg/kg	11.05.2019 13:10		200
Indeno(1,2,3-c,d)Pyrene	193-39-5	**6.18**	0.333	mg/kg	11.05.2019 13:10		200
Naphthalene	91-20-3	**21.0**	3.33	mg/kg	11.05.2019 13:10		200
Phenanthrene	85-01-8	**40.1**	0.333	mg/kg	11.05.2019 13:10		200
Pyrene	129-00-0	**33.8**	0.333	mg/kg	11.05.2019 13:10		200

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	89	%	31-130	11.05.2019 13:10	
2-Fluorobiphenyl	101	%	51-133	11.05.2019 13:10	
Terphenyl-D14	136	%	46-137	11.05.2019 13:10	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B13-2.5-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-004	Date Collected:	10.31.2019 08:10	Sample Depth:	2.5 - 3.0 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,1-Dichloroethane	75-34-3	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,1-Dichloroethene	75-35-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,1-Dichloropropene	563-58-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2-Dibromoethane	106-93-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2-Dichloroethane	107-06-2	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,2-Dichloropropane	78-87-5	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,3-Dichloropropane	142-28-9	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
2,2-Dichloropropane	594-20-7	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
2-Butanone	78-93-3	BRL	0.971	mg/kg	11.04.2019 16:33	U	50
2-Chlorotoluene	95-49-8	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
2-Hexanone	591-78-6	BRL	2.43	mg/kg	11.04.2019 16:33	U	50
4-Chlorotoluene	106-43-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.43	mg/kg	11.04.2019 16:33	U	50
Acetone	67-64-1	BRL	4.85	mg/kg	11.04.2019 16:33	U	50
Benzene	71-43-2	BRL	0.0485	mg/kg	11.04.2019 16:33	U	50
Bromobenzene	108-86-1	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Bromochloromethane	74-97-5	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Bromodichloromethane	75-27-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Bromoform	75-25-2	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Bromomethane	74-83-9	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Carbon Disulfide	75-15-0	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Carbon Tetrachloride	56-23-5	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Chlorobenzene	108-90-7	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Chloroethane	75-00-3	BRL	0.485	mg/kg	11.04.2019 16:33	U	50
Chloroform	67-66-3	BRL	0.243	mg/kg	11.04.2019 16:33	U	50

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APS, Phoenix, AZ

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Sample Id:	**D-B13-2.5-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-004	Date Collected:	10.31.2019 08:10	Sample Depth:	2.5 - 3.0 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Dibromochloromethane	124-48-1	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Dibromomethane	74-95-3	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Ethylbenzene	100-41-4	BRL	0.0485	mg/kg	11.04.2019 16:33	U	50
Hexachlorobutadiene	87-68-3	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.971	mg/kg	11.04.2019 16:33	U	50
Isopropylbenzene	98-82-8	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
m,p-Xylenes	179601-23-1	BRL	0.0971	mg/kg	11.04.2019 16:33	U	50
Methylene Chloride	75-09-2	BRL	0.971	mg/kg	11.04.2019 16:33	U	50
MTBE	1634-04-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Naphthalene	91-20-3	**10.5**	1.94	mg/kg	11.04.2019 16:54	D	200
n-Butylbenzene	104-51-8	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
n-Propylbenzene	103-65-1	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
o-Xylene	95-47-6	BRL	0.0485	mg/kg	11.04.2019 16:33	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Sec-Butylbenzene	135-98-8	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Styrene	100-42-5	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
tert-Butylbenzene	98-06-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Tetrachloroethylene	127-18-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Toluene	108-88-3	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Total Xylenes	1330-20-7	BRL	0.0485	mg/kg	11.04.2019 16:33	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Trichloroethene	79-01-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Trichlorofluoromethane	75-69-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Vinyl Acetate	108-05-4	BRL	0.485	mg/kg	11.04.2019 16:33	U	50
Vinyl Chloride	75-01-4	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
1,3-Butadiene	106-99-0	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Cyclohexane	110-82-7	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Dicyclopentadiene	77-73-6	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Methylcyclohexane	108-87-2	BRL	0.485	mg/kg	11.04.2019 16:33	U	50
n-Hexane	110-54-3	BRL	0.485	mg/kg	11.04.2019 16:33	U	50
4-Ethyltoluene	622-96-8	BRL	0.243	mg/kg	11.04.2019 16:33	U	50
Propene	115-07-1	BRL	0.243	mg/kg	11.04.2019 16:33	U	50

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APS, Phoenix, AZ

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Sample Id:	**D-B13-2.5-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-004	Date Collected:	10.31.2019 08:10	Sample Depth:	2.5 - 3.0 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	96	%	53-142	11.04.2019 16:33	
1,2-Dichloroethane-D4	99	%	56-150	11.04.2019 16:33	
Toluene-D8	102	%	70-130	11.04.2019 16:33	
4-Bromofluorobenzene	96	%	68-152	11.04.2019 16:33	

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Sample Id: **D-B13-5.0-5.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-005
Date Collected: 10.31.2019 09:10
Sample Depth: 5.0 - 5.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0239**	0.0192	mg/kg	11.05.2019 12:57		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.0**	1.89	mg/kg	11.05.2019 12:15		10
Barium	7440-39-3	**95.8**	3.77	mg/kg	11.05.2019 12:15		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.05.2019 12:15	U	10
Chromium	7440-47-3	**9.46**	3.77	mg/kg	11.05.2019 12:15		10
Lead	7439-92-1	**43.7**	1.89	mg/kg	11.05.2019 12:15		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.05.2019 12:15	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.05.2019 12:15	U	10

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Sample Id:	**D-B13-5.0-5.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-005	Date Collected:	10.31.2019 09:10	Sample Depth:	5.0 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 07:57	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.116**	0.0666	mg/kg	11.05.2019 14:50		20
Acenaphthylene	208-96-8	**1.89**	0.0666	mg/kg	11.05.2019 14:50		20
Anthracene	120-12-7	**0.927**	0.0666	mg/kg	11.05.2019 14:50		20
Benzo(a)anthracene	56-55-3	**2.13**	0.0666	mg/kg	11.05.2019 14:50		20
Benzo(a)pyrene	50-32-8	**3.21**	0.0666	mg/kg	11.05.2019 14:50		20
Benzo(b)fluoranthene	205-99-2	**3.49**	0.0666	mg/kg	11.05.2019 14:50		20
Benzo(g,h,i)perylene	191-24-2	**2.58**	0.0666	mg/kg	11.05.2019 14:50		20
Benzo(k)fluoranthene	207-08-9	**1.05**	0.0666	mg/kg	11.05.2019 14:50		20
Chrysene	218-01-9	**2.69**	0.0666	mg/kg	11.05.2019 14:50		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0666	mg/kg	11.05.2019 14:50	U	20
Fluoranthene	206-44-0	**7.83**	0.0666	mg/kg	11.05.2019 14:50		20
Fluorene	86-73-7	**0.669**	0.0666	mg/kg	11.05.2019 14:50		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**2.04**	0.0666	mg/kg	11.05.2019 14:50		20
Naphthalene	91-20-3	**2.60**	0.666	mg/kg	11.05.2019 14:50		20
Phenanthrene	85-01-8	**8.36**	0.0666	mg/kg	11.05.2019 14:50		20
Pyrene	129-00-0	**8.76**	0.0666	mg/kg	11.05.2019 14:50		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	100	%	31-130	11.05.2019 14:50	
2-Fluorobiphenyl	100	%	51-133	11.05.2019 14:50	
Terphenyl-D14	108	%	46-137	11.05.2019 14:50	

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Sample Id: **D-B13-7.5-8.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-006
Date Collected: 10.31.2019 09:25
Sample Depth: 7.5 - 8 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0267**	0.0196	mg/kg	11.05.2019 12:59		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**24.5**	1.96	mg/kg	11.05.2019 12:18		10
Barium	7440-39-3	**247**	3.92	mg/kg	11.05.2019 12:18		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.05.2019 12:18	U	10
Chromium	7440-47-3	**19.1**	3.92	mg/kg	11.05.2019 12:18		10
Lead	7439-92-1	**49.8**	1.96	mg/kg	11.05.2019 12:18		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.05.2019 12:18	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.05.2019 12:18	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

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Sample Id: **D-B13-7.5-8.0**
Lab Sample Id: 641882-006

Matrix: Soil
Date Collected: 10.31.2019 09:25

Date Received:11.04.2019 09:30
Sample Depth: 7.5 - 8 ft

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 08:00

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.580**	0.0668	mg/kg	11.05.2019 20:45		20
Acenaphthylene	208-96-8	**9.61**	0.0668	mg/kg	11.05.2019 20:45		20
Anthracene	120-12-7	**4.41**	0.0668	mg/kg	11.05.2019 20:45		20
Benzo(a)anthracene	56-55-3	**7.72**	0.0668	mg/kg	11.05.2019 20:45		20
Benzo(a)pyrene	50-32-8	**11.1**	0.0668	mg/kg	11.05.2019 20:45		20
Benzo(b)fluoranthene	205-99-2	**10.3**	0.0668	mg/kg	11.05.2019 20:45		20
Benzo(g,h,i)perylene	191-24-2	**11.0**	0.0668	mg/kg	11.05.2019 20:45		20
Benzo(k)fluoranthene	207-08-9	**3.68**	0.0668	mg/kg	11.05.2019 20:45		20
Chrysene	218-01-9	**8.48**	0.0668	mg/kg	11.05.2019 20:45		20
Dibenz(a,h)Anthracene	53-70-3	**1.26**	0.0668	mg/kg	11.05.2019 20:45		20
Fluoranthene	206-44-0	**33.8**	0.668	mg/kg	11.05.2019 20:28	D	200
Fluorene	86-73-7	**4.75**	0.0668	mg/kg	11.05.2019 20:45		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**7.63**	0.0668	mg/kg	11.05.2019 20:45		20
Naphthalene	91-20-3	**25.1**	6.68	mg/kg	11.05.2019 20:28	D	200
Phenanthrene	85-01-8	**41.3**	0.668	mg/kg	11.05.2019 20:28	D	200
Pyrene	129-00-0	**39.3**	0.668	mg/kg	11.05.2019 20:28	D	200

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	95	%	31-130	11.05.2019 20:45	
2-Fluorobiphenyl	102	%	51-133	11.05.2019 20:45	
Terphenyl-D14	122	%	46-137	11.05.2019 20:45	

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APS, Phoenix, AZ

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Sample Id: **D-B13-10.0-10.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-007
Date Collected: 10.31.2019 09:35
Sample Depth: 10 - 10.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.05.2019 13:01	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**22.7**	1.85	mg/kg	11.05.2019 12:21		10
Barium	7440-39-3	**135**	3.70	mg/kg	11.05.2019 12:21		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 12:21	U	10
Chromium	7440-47-3	**11.2**	3.70	mg/kg	11.05.2019 12:21		10
Lead	7439-92-1	**20.5**	1.85	mg/kg	11.05.2019 12:21		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 12:21	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 12:21	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B13-10.0-10.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-007	Date Collected:	10.31.2019 09:35	Sample Depth:	10 - 10.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 08:03	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0786**	0.0334	mg/kg	11.05.2019 21:18		20
Acenaphthylene	208-96-8	**1.74**	0.0334	mg/kg	11.05.2019 21:18		20
Anthracene	120-12-7	**0.706**	0.0334	mg/kg	11.05.2019 21:18		20
Benzo(a)anthracene	56-55-3	**1.57**	0.0334	mg/kg	11.05.2019 21:18		20
Benzo(a)pyrene	50-32-8	**2.44**	0.0334	mg/kg	11.05.2019 21:18		20
Benzo(b)fluoranthene	205-99-2	**2.39**	0.0334	mg/kg	11.05.2019 21:18		20
Benzo(g,h,i)perylene	191-24-2	**2.47**	0.0334	mg/kg	11.05.2019 21:18		20
Benzo(k)fluoranthene	207-08-9	**0.825**	0.0334	mg/kg	11.05.2019 21:18		20
Chrysene	218-01-9	**1.86**	0.0334	mg/kg	11.05.2019 21:18		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0334	mg/kg	11.05.2019 21:18	U	20
Fluoranthene	206-44-0	**5.87**	0.0334	mg/kg	11.05.2019 21:18		20
Fluorene	86-73-7	**0.643**	0.0334	mg/kg	11.05.2019 21:18		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.78**	0.0334	mg/kg	11.05.2019 21:18		20
Naphthalene	91-20-3	**3.23**	0.334	mg/kg	11.05.2019 21:18		20
Phenanthrene	85-01-8	**6.56**	0.0334	mg/kg	11.05.2019 21:18		20
Pyrene	129-00-0	**7.21**	0.334	mg/kg	11.05.2019 21:02	D	200

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	96	%	31-130	11.05.2019 21:18	
2-Fluorobiphenyl	98	%	51-133	11.05.2019 21:18	
Terphenyl-D14	109	%	46-137	11.05.2019 21:18	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B13-15.0-15.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-008	Date Collected:	10.31.2019 09:45	Sample Depth:	15 - 15.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	11.05.2019 09:40	Basis:	Wet Weight
Seq Number:	3106489			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.05.2019 13:03	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	0
Analyst:	DEP	Date Prep:	11.05.2019 10:00	Basis:	Dry Weight
Seq Number:	3106468			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.0**	1.79	mg/kg	11.05.2019 12:24		10
Barium	7440-39-3	**76.0**	3.57	mg/kg	11.05.2019 12:24		10
Cadmium	7440-43-9	BRL	1.79	mg/kg	11.05.2019 12:24	U	10
Chromium	7440-47-3	**6.13**	3.57	mg/kg	11.05.2019 12:24		10
Lead	7439-92-1	**10.6**	1.79	mg/kg	11.05.2019 12:24		10
Selenium	7782-49-2	BRL	1.79	mg/kg	11.05.2019 12:24	U	10
Silver	7440-22-4	BRL	1.79	mg/kg	11.05.2019 12:24	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B13-15.0-15.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-008	Date Collected:	10.31.2019 09:45	Sample Depth:	15 - 15.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 08:06	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00366**	0.00167	mg/kg	11.05.2019 21:35		1
Acenaphthylene	208-96-8	**0.0655**	0.00167	mg/kg	11.05.2019 21:35		1
Anthracene	120-12-7	**0.0267**	0.00167	mg/kg	11.05.2019 21:35		1
Benzo(a)anthracene	56-55-3	**0.0550**	0.00167	mg/kg	11.05.2019 21:35		1
Benzo(a)pyrene	50-32-8	**0.0817**	0.00167	mg/kg	11.05.2019 21:35		1
Benzo(b)fluoranthene	205-99-2	**0.0832**	0.00167	mg/kg	11.05.2019 21:35		1
Benzo(g,h,i)perylene	191-24-2	**0.0836**	0.00167	mg/kg	11.05.2019 21:35		1
Benzo(k)fluoranthene	207-08-9	**0.0268**	0.00167	mg/kg	11.05.2019 21:35		1
Chrysene	218-01-9	**0.0607**	0.00167	mg/kg	11.05.2019 21:35		1
Dibenz(a,h)Anthracene	53-70-3	**0.00962**	0.00167	mg/kg	11.05.2019 21:35		1
Fluoranthene	206-44-0	**0.206**	0.00167	mg/kg	11.05.2019 21:35		1
Fluorene	86-73-7	**0.0284**	0.00167	mg/kg	11.05.2019 21:35		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0589**	0.00167	mg/kg	11.05.2019 21:35		1
Naphthalene	91-20-3	**0.116**	0.0167	mg/kg	11.05.2019 21:35		1
Phenanthrene	85-01-8	**0.246**	0.00167	mg/kg	11.05.2019 21:35		1
Pyrene	129-00-0	**0.243**	0.00167	mg/kg	11.05.2019 21:35		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	108	%	31-130	11.05.2019 21:35	
2-Fluorobiphenyl	109	%	51-133	11.05.2019 21:35	
Terphenyl-D14	111	%	46-137	11.05.2019 21:35	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD01-103119**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-009
Date Collected: 10.31.2019 09:50

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.05.2019 13:05	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.1**	1.75	mg/kg	11.05.2019 12:27		10
Barium	7440-39-3	**75.5**	3.51	mg/kg	11.05.2019 12:27		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.05.2019 12:27	U	10
Chromium	7440-47-3	**8.37**	3.51	mg/kg	11.05.2019 12:27		10
Lead	7439-92-1	**11.8**	1.75	mg/kg	11.05.2019 12:27		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.05.2019 12:27	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.05.2019 12:27	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD01-103119**
Lab Sample Id: 641882-009

Matrix: Soil
Date Collected: 10.31.2019 09:50

Date Received:11.04.2019 09:30

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 08:09

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00607**	0.00167	mg/kg	11.05.2019 21:52		1
Acenaphthylene	208-96-8	**0.106**	0.00167	mg/kg	11.05.2019 21:52		1
Anthracene	120-12-7	**0.0495**	0.00167	mg/kg	11.05.2019 21:52		1
Benzo(a)anthracene	56-55-3	**0.124**	0.00167	mg/kg	11.05.2019 21:52		1
Benzo(a)pyrene	50-32-8	**0.184**	0.00167	mg/kg	11.05.2019 21:52		1
Benzo(b)fluoranthene	205-99-2	**0.196**	0.00167	mg/kg	11.05.2019 21:52		1
Benzo(g,h,i)perylene	191-24-2	**0.173**	0.00167	mg/kg	11.05.2019 21:52		1
Benzo(k)fluoranthene	207-08-9	**0.0654**	0.00167	mg/kg	11.05.2019 21:52		1
Chrysene	218-01-9	**0.161**	0.00167	mg/kg	11.05.2019 21:52		1
Dibenz(a,h)Anthracene	53-70-3	**0.0250**	0.00167	mg/kg	11.05.2019 21:52		1
Fluoranthene	206-44-0	**0.491**	0.0167	mg/kg	11.06.2019 11:08	D	10
Fluorene	86-73-7	**0.0474**	0.00167	mg/kg	11.05.2019 21:52		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.131**	0.00167	mg/kg	11.05.2019 21:52		1
Naphthalene	91-20-3	**0.168**	0.0167	mg/kg	11.05.2019 21:52		1
Phenanthrene	85-01-8	**0.529**	0.0167	mg/kg	11.06.2019 11:08	D	10
Pyrene	129-00-0	**0.524**	0.0167	mg/kg	11.06.2019 11:08	D	10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	98	%	31-130	11.05.2019 21:52	
2-Fluorobiphenyl	97	%	51-133	11.05.2019 21:52	
Terphenyl-D14	105	%	46-137	11.05.2019 21:52	

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APS, Phoenix, AZ

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Sample Id: **D-B13-19.5-20.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-010
Date Collected: 10.31.2019 09:55
Sample Depth: 19.5 - 20 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.05.2019 13:10	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.1**	1.75	mg/kg	11.05.2019 12:30		10
Barium	7440-39-3	**70.5**	3.51	mg/kg	11.05.2019 12:30		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.05.2019 12:30	U	10
Chromium	7440-47-3	**18.7**	3.51	mg/kg	11.05.2019 12:30		10
Lead	7439-92-1	**6.70**	1.75	mg/kg	11.05.2019 12:30		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.05.2019 12:30	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.05.2019 12:30	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B13-19.5-20.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-010	Date Collected:	10.31.2019 09:55	Sample Depth:	19.5 - 20 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 08:12	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00265**	0.00166	mg/kg	11.05.2019 22:08		1
Acenaphthylene	208-96-8	**0.0343**	0.00166	mg/kg	11.05.2019 22:08		1
Anthracene	120-12-7	**0.0189**	0.00166	mg/kg	11.05.2019 22:08		1
Benzo(a)anthracene	56-55-3	**0.0355**	0.00166	mg/kg	11.05.2019 22:08		1
Benzo(a)pyrene	50-32-8	**0.0488**	0.00166	mg/kg	11.05.2019 22:08		1
Benzo(b)fluoranthene	205-99-2	**0.0504**	0.00166	mg/kg	11.05.2019 22:08		1
Benzo(g,h,i)perylene	191-24-2	**0.0455**	0.00166	mg/kg	11.05.2019 22:08		1
Benzo(k)fluoranthene	207-08-9	**0.0149**	0.00166	mg/kg	11.05.2019 22:08		1
Chrysene	218-01-9	**0.0380**	0.00166	mg/kg	11.05.2019 22:08		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.05.2019 22:08	U	1
Fluoranthene	206-44-0	**0.128**	0.00166	mg/kg	11.05.2019 22:08		1
Fluorene	86-73-7	**0.0190**	0.00166	mg/kg	11.05.2019 22:08		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0329**	0.00166	mg/kg	11.05.2019 22:08		1
Naphthalene	91-20-3	**0.0518**	0.0166	mg/kg	11.05.2019 22:08		1
Phenanthrene	85-01-8	**0.159**	0.00166	mg/kg	11.05.2019 22:08		1
Pyrene	129-00-0	**0.152**	0.00166	mg/kg	11.05.2019 22:08		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	114	%	31-130	11.05.2019 22:08	
2-Fluorobiphenyl	117	%	51-133	11.05.2019 22:08	
Terphenyl-D14	123	%	46-137	11.05.2019 22:08	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-TB01-103119**
Lab Sample Id: 641882-011

Matrix: Soil
Date Collected: 10.31.2019 08:00

Date Received:11.04.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,1-Dichloroethane	75-34-3	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,1-Dichloroethene	75-35-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,1-Dichloropropene	563-58-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2-Dibromoethane	106-93-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2-Dichloroethane	107-06-2	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,2-Dichloropropane	78-87-5	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,3-Dichloropropane	142-28-9	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
2,2-Dichloropropane	594-20-7	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
2-Butanone	78-93-3	BRL	1.00	mg/kg	11.04.2019 17:38	U	50
2-Chlorotoluene	95-49-8	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
2-Hexanone	591-78-6	BRL	2.50	mg/kg	11.04.2019 17:38	U	50
4-Chlorotoluene	106-43-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.50	mg/kg	11.04.2019 17:38	U	50
Acetone	67-64-1	BRL	5.00	mg/kg	11.04.2019 17:38	U	50
Benzene	71-43-2	BRL	0.0500	mg/kg	11.04.2019 17:38	U	50
Bromobenzene	108-86-1	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Bromochloromethane	74-97-5	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Bromodichloromethane	75-27-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Bromoform	75-25-2	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Bromomethane	74-83-9	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Carbon Disulfide	75-15-0	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Carbon Tetrachloride	56-23-5	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Chlorobenzene	108-90-7	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Chloroethane	75-00-3	BRL	0.500	mg/kg	11.04.2019 17:38	U	50
Chloroform	67-66-3	BRL	0.250	mg/kg	11.04.2019 17:38	U	50

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-TB01-103119**
Lab Sample Id: 641882-011

Matrix: Soil
Date Collected: 10.31.2019 08:00

Date Received:11.04.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Dibromochloromethane	124-48-1	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Dibromomethane	74-95-3	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Ethylbenzene	100-41-4	BRL	0.0500	mg/kg	11.04.2019 17:38	U	50
Hexachlorobutadiene	87-68-3	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.00	mg/kg	11.04.2019 17:38	U	50
Isopropylbenzene	98-82-8	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
m,p-Xylenes	179601-23-1	BRL	0.100	mg/kg	11.04.2019 17:38	U	50
Methylene Chloride	75-09-2	BRL	1.00	mg/kg	11.04.2019 17:38	U	50
MTBE	1634-04-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Naphthalene	91-20-3	BRL	0.500	mg/kg	11.04.2019 17:38	U	50
n-Butylbenzene	104-51-8	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
n-Propylbenzene	103-65-1	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
o-Xylene	95-47-6	BRL	0.0500	mg/kg	11.04.2019 17:38	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Sec-Butylbenzene	135-98-8	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Styrene	100-42-5	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
tert-Butylbenzene	98-06-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Tetrachloroethylene	127-18-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Toluene	108-88-3	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Total Xylenes	1330-20-7	BRL	0.0500	mg/kg	11.04.2019 17:38	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Trichloroethene	79-01-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Trichlorofluoromethane	75-69-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Vinyl Acetate	108-05-4	BRL	0.500	mg/kg	11.04.2019 17:38	U	50
Vinyl Chloride	75-01-4	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
1,3-Butadiene	106-99-0	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Cyclohexane	110-82-7	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Dicyclopentadiene	77-73-6	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Methylcyclohexane	108-87-2	BRL	0.500	mg/kg	11.04.2019 17:38	U	50
n-Hexane	110-54-3	BRL	0.500	mg/kg	11.04.2019 17:38	U	50
4-Ethyltoluene	622-96-8	BRL	0.250	mg/kg	11.04.2019 17:38	U	50
Propene	115-07-1	BRL	0.250	mg/kg	11.04.2019 17:38	U	50

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-TB01-103119**
Lab Sample Id: 641882-011

Matrix: Soil
Date Collected: 10.31.2019 08:00

Date Received:11.04.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	96	%	53-142	11.04.2019 17:38	
1,2-Dichloroethane-D4	102	%	56-150	11.04.2019 17:38	
Toluene-D8	103	%	70-130	11.04.2019 17:38	
4-Bromofluorobenzene	89	%	68-152	11.04.2019 17:38	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-1.0-1.5** Matrix: Soil Date Received:11.04.2019 09:30
Lab Sample Id: 641882-012 Date Collected: 10.31.2019 11:15 Sample Depth: 1.0 - 1.5 ft

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.05.2019 13:00 Basis: Wet Weight
Seq Number: 3106545 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0588	mg/kg	11.05.2019 15:29	U	1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.05.2019 09:40 Basis: Wet Weight
Seq Number: 3106489 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0302**	0.0185	mg/kg	11.05.2019 13:22		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture: 0
Analyst: DEP Date Prep: 11.05.2019 10:00 Basis: Dry Weight
Seq Number: 3106468 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**18.0**	1.96	mg/kg	11.05.2019 12:33		10
Barium	7440-39-3	**111**	3.92	mg/kg	11.05.2019 12:33		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.05.2019 12:33	U	10
Chromium	7440-47-3	**10.0**	3.92	mg/kg	11.05.2019 12:33		10
Lead	7439-92-1	**166**	1.96	mg/kg	11.05.2019 12:33		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.05.2019 12:33	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.05.2019 12:33	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-1.0-1.5** Matrix: Soil Date Received:11.04.2019 09:30

Lab Sample Id: 641882-012 Date Collected: 10.31.2019 11:15 Sample Depth: 1.0 - 1.5 ft

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106491

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.05.2019 12:10		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.2019 13:30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.30**		SU	11.04.2019 12:44		1
Temperature	TEMP	**25.1**		Deg C	11.04.2019 12:44	+	1

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Sample Id: **D-B12-1.0-1.5**
Lab Sample Id: 641882-012

Matrix: Soil
Date Collected: 10.31.2019 11:15

Date Received:11.04.2019 09:30
Sample Depth: 1.0 - 1.5 ft

Analytical Method: PCBs by SW 8082A
Tech: JOZ
Analyst: SHM
Seq Number: 3106445

Date Prep: 11.04.2019 11:27

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0333	mg/kg	11.05.2019 13:18	U	2
PCB-1221	11104-28-2	BRL	0.0333	mg/kg	11.05.2019 13:18	U	2
PCB-1232	11141-16-5	BRL	0.0333	mg/kg	11.05.2019 13:18	U	2
PCB-1242	53469-21-9	BRL	0.0333	mg/kg	11.05.2019 13:18	U	2
PCB-1248	12672-29-6	BRL	0.0333	mg/kg	11.05.2019 13:18	U	2
PCB-1254	11097-69-1	BRL	0.0333	mg/kg	11.05.2019 13:18	U	2
PCB-1260	11096-82-5	BRL	0.0333	mg/kg	11.05.2019 13:18	U	2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	126	%	39-125	11.05.2019 13:18	**
Tetrachloro-m-xylene	72	%	37-124	11.05.2019 13:18	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-1.0-1.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-012	Date Collected:	10.31.2019 11:15	Sample Depth:	1.0 - 1.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 08:15	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0666	mg/kg	11.05.2019 22:25	U	20
Acenaphthylene	208-96-8	**0.471**	0.0666	mg/kg	11.05.2019 22:25		20
Anthracene	120-12-7	**0.246**	0.0666	mg/kg	11.05.2019 22:25		20
Benzo(a)anthracene	56-55-3	**0.811**	0.0666	mg/kg	11.05.2019 22:25		20
Benzo(a)pyrene	50-32-8	**1.68**	0.0666	mg/kg	11.05.2019 22:25		20
Benzo(b)fluoranthene	205-99-2	**1.75**	0.0666	mg/kg	11.05.2019 22:25		20
Benzo(g,h,i)perylene	191-24-2	**2.12**	0.0666	mg/kg	11.05.2019 22:25		20
Benzo(k)fluoranthene	207-08-9	**0.520**	0.0666	mg/kg	11.05.2019 22:25		20
Chrysene	218-01-9	**1.04**	0.0666	mg/kg	11.05.2019 22:25		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0666	mg/kg	11.05.2019 22:25	U	20
Fluoranthene	206-44-0	**3.68**	0.0666	mg/kg	11.05.2019 22:25		20
Fluorene	86-73-7	**0.0716**	0.0666	mg/kg	11.05.2019 22:25		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.44**	0.0666	mg/kg	11.05.2019 22:25		20
Naphthalene	91-20-3	BRL	0.666	mg/kg	11.05.2019 22:25	U	20
Phenanthrene	85-01-8	**2.37**	0.0666	mg/kg	11.05.2019 22:25		20
Pyrene	129-00-0	**4.40**	0.0666	mg/kg	11.05.2019 22:25		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	98	%	31-130	11.05.2019 22:25	
2-Fluorobiphenyl	98	%	51-133	11.05.2019 22:25	
Terphenyl-D14	103	%	46-137	11.05.2019 22:25	

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APS, Phoenix, AZ

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Sample Id:	**D-B12-1.0-1.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-012	Date Collected:	10.31.2019 11:15	Sample Depth:	1.0 - 1.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,1-Dichloroethane	75-34-3	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,1-Dichloroethene	75-35-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,1-Dichloropropene	563-58-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2-Dibromoethane	106-93-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2-Dichloroethane	107-06-2	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,2-Dichloropropane	78-87-5	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,3-Dichloropropane	142-28-9	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
2,2-Dichloropropane	594-20-7	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
2-Butanone	78-93-3	BRL	1.01	mg/kg	11.04.2019 17:59	U	50
2-Chlorotoluene	95-49-8	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
2-Hexanone	591-78-6	BRL	2.53	mg/kg	11.04.2019 17:59	U	50
4-Chlorotoluene	106-43-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.53	mg/kg	11.04.2019 17:59	U	50
Acetone	67-64-1	BRL	5.06	mg/kg	11.04.2019 17:59	U	50
Benzene	71-43-2	BRL	0.0506	mg/kg	11.04.2019 17:59	U	50
Bromobenzene	108-86-1	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Bromochloromethane	74-97-5	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Bromodichloromethane	75-27-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Bromoform	75-25-2	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Bromomethane	74-83-9	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Carbon Disulfide	75-15-0	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Carbon Tetrachloride	56-23-5	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Chlorobenzene	108-90-7	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Chloroethane	75-00-3	BRL	0.506	mg/kg	11.04.2019 17:59	U	50
Chloroform	67-66-3	BRL	0.253	mg/kg	11.04.2019 17:59	U	50

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-1.0-1.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-012	Date Collected:	10.31.2019 11:15	Sample Depth:	1.0 - 1.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Dibromochloromethane	124-48-1	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Dibromomethane	74-95-3	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Ethylbenzene	100-41-4	BRL	0.0506	mg/kg	11.04.2019 17:59	U	50
Hexachlorobutadiene	87-68-3	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.01	mg/kg	11.04.2019 17:59	U	50
Isopropylbenzene	98-82-8	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
m,p-Xylenes	179601-23-1	BRL	0.101	mg/kg	11.04.2019 17:59	U	50
Methylene Chloride	75-09-2	BRL	1.01	mg/kg	11.04.2019 17:59	U	50
MTBE	1634-04-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Naphthalene	91-20-3	BRL	0.506	mg/kg	11.04.2019 17:59	U	50
n-Butylbenzene	104-51-8	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
n-Propylbenzene	103-65-1	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
o-Xylene	95-47-6	BRL	0.0506	mg/kg	11.04.2019 17:59	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Sec-Butylbenzene	135-98-8	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Styrene	100-42-5	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
tert-Butylbenzene	98-06-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Tetrachloroethylene	127-18-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Toluene	108-88-3	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Total Xylenes	1330-20-7	BRL	0.0506	mg/kg	11.04.2019 17:59	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Trichloroethene	79-01-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Trichlorofluoromethane	75-69-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Vinyl Acetate	108-05-4	BRL	0.506	mg/kg	11.04.2019 17:59	U	50
Vinyl Chloride	75-01-4	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
1,3-Butadiene	106-99-0	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Cyclohexane	110-82-7	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Dicyclopentadiene	77-73-6	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Methylcyclohexane	108-87-2	BRL	0.506	mg/kg	11.04.2019 17:59	U	50
n-Hexane	110-54-3	BRL	0.506	mg/kg	11.04.2019 17:59	U	50
4-Ethyltoluene	622-96-8	BRL	0.253	mg/kg	11.04.2019 17:59	U	50
Propene	115-07-1	BRL	0.253	mg/kg	11.04.2019 17:59	U	50

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-1.0-1.5**
Lab Sample Id: 641882-012

Matrix: Soil
Date Collected: 10.31.2019 11:15

Date Received:11.04.2019 09:30
Sample Depth: 1.0 - 1.5 ft

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	90	%	53-142	11.04.2019 17:59	
1,2-Dichloroethane-D4	99	%	56-150	11.04.2019 17:59	
Toluene-D8	104	%	70-130	11.04.2019 17:59	
4-Bromofluorobenzene	95	%	68-152	11.04.2019 17:59	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-2.5-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-013	Date Collected:	10.31.2019 11:25	Sample Depth:	2.5 - 3.0 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	11.05.2019 09:40	Basis:	Wet Weight
Seq Number:	3106489			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.05.2019 13:24	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	0
Analyst:	DEP	Date Prep:	11.05.2019 10:00	Basis:	Dry Weight
Seq Number:	3106468			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.1**	1.69	mg/kg	11.05.2019 12:42		10
Barium	7440-39-3	**136**	3.39	mg/kg	11.05.2019 12:42		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.05.2019 12:42	U	10
Chromium	7440-47-3	**9.32**	3.39	mg/kg	11.05.2019 12:42		10
Lead	7439-92-1	**8.74**	1.69	mg/kg	11.05.2019 12:42		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.05.2019 12:42	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.05.2019 12:42	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-2.5-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-013	Date Collected:	10.31.2019 11:25	Sample Depth:	2.5 - 3.0 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 08:18	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.05.2019 22:58	U	1
Acenaphthylene	208-96-8	**0.00490**	0.00166	mg/kg	11.05.2019 22:58		1
Anthracene	120-12-7	**0.00220**	0.00166	mg/kg	11.05.2019 22:58		1
Benzo(a)anthracene	56-55-3	**0.00481**	0.00166	mg/kg	11.05.2019 22:58		1
Benzo(a)pyrene	50-32-8	**0.00724**	0.00166	mg/kg	11.05.2019 22:58		1
Benzo(b)fluoranthene	205-99-2	**0.00736**	0.00166	mg/kg	11.05.2019 22:58		1
Benzo(g,h,i)perylene	191-24-2	**0.00718**	0.00166	mg/kg	11.05.2019 22:58		1
Benzo(k)fluoranthene	207-08-9	**0.00198**	0.00166	mg/kg	11.05.2019 22:58		1
Chrysene	218-01-9	**0.00503**	0.00166	mg/kg	11.05.2019 22:58		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.05.2019 22:58	U	1
Fluoranthene	206-44-0	**0.0181**	0.00166	mg/kg	11.05.2019 22:58		1
Fluorene	86-73-7	**0.00212**	0.00166	mg/kg	11.05.2019 22:58		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00503**	0.00166	mg/kg	11.05.2019 22:58		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.05.2019 22:58	U	1
Phenanthrene	85-01-8	**0.0194**	0.00166	mg/kg	11.05.2019 22:58		1
Pyrene	129-00-0	**0.0216**	0.00166	mg/kg	11.05.2019 22:58		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	105	%	31-130	11.05.2019 22:58	
2-Fluorobiphenyl	111	%	51-133	11.05.2019 22:58	
Terphenyl-D14	115	%	46-137	11.05.2019 22:58	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

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Sample Id:	**D-B12-2.5-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-013	Date Collected:	10.31.2019 11:25	Sample Depth:	2.5 - 3.0 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,1-Dichloroethane	75-34-3	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,1-Dichloroethene	75-35-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,1-Dichloropropene	563-58-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2-Dibromoethane	106-93-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2-Dichloroethane	107-06-2	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,2-Dichloropropane	78-87-5	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,3-Dichloropropane	142-28-9	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
2,2-Dichloropropane	594-20-7	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
2-Butanone	78-93-3	BRL	0.882	mg/kg	11.04.2019 18:21	U	50
2-Chlorotoluene	95-49-8	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
2-Hexanone	591-78-6	BRL	2.20	mg/kg	11.04.2019 18:21	U	50
4-Chlorotoluene	106-43-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.20	mg/kg	11.04.2019 18:21	U	50
Acetone	67-64-1	BRL	4.41	mg/kg	11.04.2019 18:21	U	50
Benzene	71-43-2	BRL	0.0441	mg/kg	11.04.2019 18:21	U	50
Bromobenzene	108-86-1	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Bromochloromethane	74-97-5	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Bromodichloromethane	75-27-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Bromoform	75-25-2	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Bromomethane	74-83-9	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Carbon Disulfide	75-15-0	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Carbon Tetrachloride	56-23-5	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Chlorobenzene	108-90-7	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Chloroethane	75-00-3	BRL	0.441	mg/kg	11.04.2019 18:21	U	50
Chloroform	67-66-3	BRL	0.220	mg/kg	11.04.2019 18:21	U	50

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-2.5-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-013	Date Collected:	10.31.2019 11:25	Sample Depth:	2.5 - 3.0 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Dibromochloromethane	124-48-1	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Dibromomethane	74-95-3	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Ethylbenzene	100-41-4	BRL	0.0441	mg/kg	11.04.2019 18:21	U	50
Hexachlorobutadiene	87-68-3	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.882	mg/kg	11.04.2019 18:21	U	50
Isopropylbenzene	98-82-8	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
m,p-Xylenes	179601-23-1	BRL	0.0882	mg/kg	11.04.2019 18:21	U	50
Methylene Chloride	75-09-2	BRL	0.882	mg/kg	11.04.2019 18:21	U	50
MTBE	1634-04-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Naphthalene	91-20-3	BRL	0.441	mg/kg	11.04.2019 18:21	U	50
n-Butylbenzene	104-51-8	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
n-Propylbenzene	103-65-1	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
o-Xylene	95-47-6	BRL	0.0441	mg/kg	11.04.2019 18:21	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Sec-Butylbenzene	135-98-8	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Styrene	100-42-5	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
tert-Butylbenzene	98-06-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Tetrachloroethylene	127-18-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Toluene	108-88-3	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Total Xylenes	1330-20-7	BRL	0.0441	mg/kg	11.04.2019 18:21	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Trichloroethene	79-01-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Trichlorofluoromethane	75-69-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Vinyl Acetate	108-05-4	BRL	0.441	mg/kg	11.04.2019 18:21	U	50
Vinyl Chloride	75-01-4	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
1,3-Butadiene	106-99-0	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Cyclohexane	110-82-7	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Dicyclopentadiene	77-73-6	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Methylcyclohexane	108-87-2	BRL	0.441	mg/kg	11.04.2019 18:21	U	50
n-Hexane	110-54-3	BRL	0.441	mg/kg	11.04.2019 18:21	U	50
4-Ethyltoluene	622-96-8	BRL	0.220	mg/kg	11.04.2019 18:21	U	50
Propene	115-07-1	BRL	0.220	mg/kg	11.04.2019 18:21	U	50

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-2.5-3.0**
Lab Sample Id: 641882-013

Matrix: Soil
Date Collected: 10.31.2019 11:25

Date Received:11.04.2019 09:30
Sample Depth: 2.5 - 3.0 ft

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	91	%	53-142	11.04.2019 18:21	
1,2-Dichloroethane-D4	101	%	56-150	11.04.2019 18:21	
Toluene-D8	103	%	70-130	11.04.2019 18:21	
4-Bromofluorobenzene	95	%	68-152	11.04.2019 18:21	

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APS, Phoenix, AZ

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Sample Id: **D-B12-5.0-5.5**
Lab Sample Id: 641882-014
Matrix: Soil
Date Collected: 10.31.2019 11:35
Date Received:11.04.2019 09:30
Sample Depth: 5.0 - 5.5 ft

Analytical Method: Total Cyanide by SW 9012
Tech: KCS
Analyst: KCS
Seq Number: 3106545
Date Prep: 11.05.2019 13:00
Prep Method: E335.4P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.190**	0.0544	mg/kg	11.05.2019 15:30		1

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106489
Date Prep: 11.05.2019 09:40
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0387**	0.0167	mg/kg	11.05.2019 13:25		1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106468
Date Prep: 11.05.2019 10:00
Prep Method: SW3050B
% Moisture: 0
Basis: Dry Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.2**	1.89	mg/kg	11.05.2019 12:45		10
Barium	7440-39-3	**96.0**	3.77	mg/kg	11.05.2019 12:45		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.05.2019 12:45	U	10
Chromium	7440-47-3	**10.6**	3.77	mg/kg	11.05.2019 12:45		10
Lead	7439-92-1	**169**	1.89	mg/kg	11.05.2019 12:45		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.05.2019 12:45	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.05.2019 12:45	U	10

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Sample Id: **D-B12-5.0-5.5** Matrix: Soil Date Received:11.04.2019 09:30

Lab Sample Id: 641882-014 Date Collected: 10.31.2019 11:35 Sample Depth: 5.0 - 5.5 ft

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106491

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.05.2019 12:28		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.2019 13:30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.13**		SU	11.04.2019 12:44		1
Temperature	TEMP	**24.3**		Deg C	11.04.2019 12:44	+	1

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Sample Id: **D-B12-5.0-5.5**
Lab Sample Id: 641882-014

Matrix: Soil
Date Collected: 10.31.2019 11:35

Date Received:11.04.2019 09:30
Sample Depth: 5.0 - 5.5 ft

Analytical Method: PCBs by SW 8082A
Tech: JOZ
Analyst: SHM
Seq Number: 3106445

Date Prep: 11.04.2019 11:30

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0833	mg/kg	11.05.2019 13:41	U	5
PCB-1221	11104-28-2	BRL	0.0833	mg/kg	11.05.2019 13:41	U	5
PCB-1232	11141-16-5	BRL	0.0833	mg/kg	11.05.2019 13:41	U	5
PCB-1242	53469-21-9	BRL	0.0833	mg/kg	11.05.2019 13:41	U	5
PCB-1248	12672-29-6	BRL	0.0833	mg/kg	11.05.2019 13:41	U	5
PCB-1254	11097-69-1	BRL	0.0833	mg/kg	11.05.2019 13:41	U	5
PCB-1260	11096-82-5	BRL	0.0833	mg/kg	11.05.2019 13:41	U	5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	311	%	39-125	11.05.2019 13:41	**
Tetrachloro-m-xylene	68	%	37-124	11.05.2019 13:41	

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APS, Phoenix, AZ

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Sample Id:	**D-B12-5.0-5.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-014	Date Collected:	10.31.2019 11:35	Sample Depth:	5.0 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 08:21	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0553**	0.0334	mg/kg	11.05.2019 23:15		20
Acenaphthylene	208-96-8	**0.847**	0.0334	mg/kg	11.05.2019 23:15		20
Anthracene	120-12-7	**0.427**	0.0334	mg/kg	11.05.2019 23:15		20
Benzo(a)anthracene	56-55-3	**1.24**	0.0334	mg/kg	11.05.2019 23:15		20
Benzo(a)pyrene	50-32-8	**2.65**	0.0334	mg/kg	11.05.2019 23:15		20
Benzo(b)fluoranthene	205-99-2	**2.58**	0.0334	mg/kg	11.05.2019 23:15		20
Benzo(g,h,i)perylene	191-24-2	**3.17**	0.0334	mg/kg	11.05.2019 23:15		20
Benzo(k)fluoranthene	207-08-9	**0.777**	0.0334	mg/kg	11.05.2019 23:15		20
Chrysene	218-01-9	**1.61**	0.0334	mg/kg	11.05.2019 23:15		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0334	mg/kg	11.05.2019 23:15	U	20
Fluoranthene	206-44-0	**5.61**	0.0334	mg/kg	11.05.2019 23:15		20
Fluorene	86-73-7	**0.134**	0.0334	mg/kg	11.05.2019 23:15		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**2.16**	0.0334	mg/kg	11.05.2019 23:15		20
Naphthalene	91-20-3	**0.775**	0.334	mg/kg	11.05.2019 23:15		20
Phenanthrene	85-01-8	**3.83**	0.0334	mg/kg	11.05.2019 23:15		20
Pyrene	129-00-0	**6.53**	0.334	mg/kg	11.06.2019 11:24	D	200

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	90	%	31-130	11.05.2019 23:15	
2-Fluorobiphenyl	103	%	51-133	11.05.2019 23:15	
Terphenyl-D14	116	%	46-137	11.05.2019 23:15	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-5.0-5.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-014	Date Collected:	10.31.2019 11:35	Sample Depth:	5.0 - 5.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,1-Dichloroethane	75-34-3	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,1-Dichloroethene	75-35-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,1-Dichloropropene	563-58-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2-Dibromoethane	106-93-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2-Dichloroethane	107-06-2	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,2-Dichloropropane	78-87-5	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,3-Dichloropropane	142-28-9	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
2,2-Dichloropropane	594-20-7	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
2-Butanone	78-93-3	BRL	0.839	mg/kg	11.04.2019 18:42	U	50
2-Chlorotoluene	95-49-8	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
2-Hexanone	591-78-6	BRL	2.10	mg/kg	11.04.2019 18:42	U	50
4-Chlorotoluene	106-43-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.10	mg/kg	11.04.2019 18:42	U	50
Acetone	67-64-1	BRL	4.19	mg/kg	11.04.2019 18:42	U	50
Benzene	71-43-2	BRL	0.0419	mg/kg	11.04.2019 18:42	U	50
Bromobenzene	108-86-1	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Bromochloromethane	74-97-5	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Bromodichloromethane	75-27-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Bromoform	75-25-2	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Bromomethane	74-83-9	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Carbon Disulfide	75-15-0	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Carbon Tetrachloride	56-23-5	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Chlorobenzene	108-90-7	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Chloroethane	75-00-3	BRL	0.419	mg/kg	11.04.2019 18:42	U	50
Chloroform	67-66-3	BRL	0.210	mg/kg	11.04.2019 18:42	U	50

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-5.0-5.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-014	Date Collected:	10.31.2019 11:35	Sample Depth:	5.0 - 5.5 ft
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.04.2019 15:30	Basis:	Wet Weight
Seq Number:	3106377			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Dibromochloromethane	124-48-1	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Dibromomethane	74-95-3	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Ethylbenzene	100-41-4	BRL	0.0419	mg/kg	11.04.2019 18:42	U	50
Hexachlorobutadiene	87-68-3	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.839	mg/kg	11.04.2019 18:42	U	50
Isopropylbenzene	98-82-8	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
m,p-Xylenes	179601-23-1	BRL	0.0839	mg/kg	11.04.2019 18:42	U	50
Methylene Chloride	75-09-2	BRL	0.839	mg/kg	11.04.2019 18:42	U	50
MTBE	1634-04-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Naphthalene	91-20-3	BRL	0.419	mg/kg	11.04.2019 18:42	U	50
n-Butylbenzene	104-51-8	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
n-Propylbenzene	103-65-1	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
o-Xylene	95-47-6	BRL	0.0419	mg/kg	11.04.2019 18:42	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Sec-Butylbenzene	135-98-8	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Styrene	100-42-5	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
tert-Butylbenzene	98-06-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Tetrachloroethylene	127-18-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Toluene	108-88-3	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Total Xylenes	1330-20-7	BRL	0.0419	mg/kg	11.04.2019 18:42	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Trichloroethene	79-01-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Trichlorofluoromethane	75-69-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Vinyl Acetate	108-05-4	BRL	0.419	mg/kg	11.04.2019 18:42	U	50
Vinyl Chloride	75-01-4	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
1,3-Butadiene	106-99-0	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Cyclohexane	110-82-7	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Dicyclopentadiene	77-73-6	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Methylcyclohexane	108-87-2	BRL	0.419	mg/kg	11.04.2019 18:42	U	50
n-Hexane	110-54-3	BRL	0.419	mg/kg	11.04.2019 18:42	U	50
4-Ethyltoluene	622-96-8	BRL	0.210	mg/kg	11.04.2019 18:42	U	50
Propene	115-07-1	BRL	0.210	mg/kg	11.04.2019 18:42	U	50

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-5.0-5.5**
Lab Sample Id: 641882-014

Matrix: Soil
Date Collected: 10.31.2019 11:35

Date Received:11.04.2019 09:30
Sample Depth: 5.0 - 5.5 ft

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	92	%	53-142	11.04.2019 18:42	
1,2-Dichloroethane-D4	101	%	56-150	11.04.2019 18:42	
Toluene-D8	103	%	70-130	11.04.2019 18:42	
4-Bromofluorobenzene	96	%	68-152	11.04.2019 18:42	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-103119** Matrix: Soil Date Received:11.04.2019 09:30
Lab Sample Id: 641882-015 Date Collected: 10.31.2019 11:40

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.05.2019 13:00 Basis: Wet Weight
Seq Number: 3106545 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.136**	0.0611	mg/kg	11.05.2019 15:31		1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.05.2019 09:40 Basis: Wet Weight
Seq Number: 3106489 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0584**	0.0185	mg/kg	11.05.2019 13:27		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture: 0
Analyst: DEP Date Prep: 11.05.2019 10:00 Basis: Dry Weight
Seq Number: 3106468 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.9**	1.75	mg/kg	11.05.2019 12:48		10
Barium	7440-39-3	**109**	3.51	mg/kg	11.05.2019 12:48		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.05.2019 12:48	U	10
Chromium	7440-47-3	**12.5**	3.51	mg/kg	11.05.2019 12:48		10
Lead	7439-92-1	**113**	1.75	mg/kg	11.05.2019 12:48		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.05.2019 12:48	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.05.2019 12:48	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-103119** Matrix: Soil Date Received:11.04.2019 09:30

Lab Sample Id: 641882-015 Date Collected: 10.31.2019 11:40

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106491

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.05.2019 12:45		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.2019 13:30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.09**		SU	11.04.2019 12:44		1
Temperature	TEMP	**24.5**		Deg C	11.04.2019 12:44	+	1

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-103119**
Lab Sample Id: 641882-015

Matrix: Soil
Date Collected: 10.31.2019 11:40

Date Received:11.04.2019 09:30

Analytical Method: PCBs by SW 8082A
Tech: JOZ
Analyst: SHM
Seq Number: 3106445

Date Prep: 11.04.2019 11:33

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0333	mg/kg	11.05.2019 13:30	U	2
PCB-1221	11104-28-2	BRL	0.0333	mg/kg	11.05.2019 13:30	U	2
PCB-1232	11141-16-5	BRL	0.0333	mg/kg	11.05.2019 13:30	U	2
PCB-1242	53469-21-9	BRL	0.0333	mg/kg	11.05.2019 13:30	U	2
PCB-1248	12672-29-6	BRL	0.0333	mg/kg	11.05.2019 13:30	U	2
PCB-1254	11097-69-1	BRL	0.0333	mg/kg	11.05.2019 13:30	U	2
PCB-1260	11096-82-5	BRL	0.0333	mg/kg	11.05.2019 13:30	U	2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	138	%	39-125	11.05.2019 13:30	**
Tetrachloro-m-xylene	74	%	37-124	11.05.2019 13:30	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-103119**
Lab Sample Id: 641882-015

Matrix: Soil
Date Collected: 10.31.2019 11:40

Date Received:11.04.2019 09:30

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 08:24

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0166	mg/kg	11.05.2019 23:32	U	10
Acenaphthylene	208-96-8	**0.107**	0.0166	mg/kg	11.05.2019 23:32		10
Anthracene	120-12-7	**0.0470**	0.0166	mg/kg	11.05.2019 23:32		10
Benzo(a)anthracene	56-55-3	**0.175**	0.0166	mg/kg	11.05.2019 23:32		10
Benzo(a)pyrene	50-32-8	**0.386**	0.0166	mg/kg	11.05.2019 23:32		10
Benzo(b)fluoranthene	205-99-2	**0.418**	0.0166	mg/kg	11.05.2019 23:32		10
Benzo(g,h,i)perylene	191-24-2	**0.468**	0.0166	mg/kg	11.05.2019 23:32		10
Benzo(k)fluoranthene	207-08-9	**0.0903**	0.0166	mg/kg	11.05.2019 23:32		10
Chrysene	218-01-9	**0.228**	0.0166	mg/kg	11.05.2019 23:32		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0166	mg/kg	11.05.2019 23:32	U	10
Fluoranthene	206-44-0	**0.633**	0.0166	mg/kg	11.05.2019 23:32		10
Fluorene	86-73-7	BRL	0.0166	mg/kg	11.05.2019 23:32	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.317**	0.0166	mg/kg	11.05.2019 23:32		10
Naphthalene	91-20-3	BRL	0.166	mg/kg	11.05.2019 23:32	U	10
Phenanthrene	85-01-8	**0.367**	0.0166	mg/kg	11.05.2019 23:32		10
Pyrene	129-00-0	**0.777**	0.0166	mg/kg	11.05.2019 23:32		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	111	%	31-130	11.05.2019 23:32	
2-Fluorobiphenyl	117	%	51-133	11.05.2019 23:32	
Terphenyl-D14	119	%	46-137	11.05.2019 23:32	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-103119**
Lab Sample Id: 641882-015

Matrix: Soil
Date Collected: 10.31.2019 11:40

Date Received:11.04.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,1-Dichloroethane	75-34-3	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,1-Dichloroethene	75-35-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,1-Dichloropropene	563-58-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2-Dibromoethane	106-93-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2-Dichloroethane	107-06-2	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,2-Dichloropropane	78-87-5	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,3-Dichloropropane	142-28-9	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
2,2-Dichloropropane	594-20-7	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
2-Butanone	78-93-3	BRL	0.856	mg/kg	11.04.2019 19:03	U	50
2-Chlorotoluene	95-49-8	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
2-Hexanone	591-78-6	BRL	2.14	mg/kg	11.04.2019 19:03	U	50
4-Chlorotoluene	106-43-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.14	mg/kg	11.04.2019 19:03	U	50
Acetone	67-64-1	BRL	4.28	mg/kg	11.04.2019 19:03	U	50
Benzene	71-43-2	BRL	0.0428	mg/kg	11.04.2019 19:03	U	50
Bromobenzene	108-86-1	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Bromochloromethane	74-97-5	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Bromodichloromethane	75-27-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Bromoform	75-25-2	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Bromomethane	74-83-9	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Carbon Disulfide	75-15-0	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Carbon Tetrachloride	56-23-5	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Chlorobenzene	108-90-7	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Chloroethane	75-00-3	BRL	0.428	mg/kg	11.04.2019 19:03	U	50
Chloroform	67-66-3	BRL	0.214	mg/kg	11.04.2019 19:03	U	50

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-103119**
Lab Sample Id: 641882-015

Matrix: Soil
Date Collected: 10.31.2019 11:40

Date Received:11.04.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Dibromochloromethane	124-48-1	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Dibromomethane	74-95-3	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Ethylbenzene	100-41-4	BRL	0.0428	mg/kg	11.04.2019 19:03	U	50
Hexachlorobutadiene	87-68-3	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.856	mg/kg	11.04.2019 19:03	U	50
Isopropylbenzene	98-82-8	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
m,p-Xylenes	179601-23-1	BRL	0.0856	mg/kg	11.04.2019 19:03	U	50
Methylene Chloride	75-09-2	BRL	0.856	mg/kg	11.04.2019 19:03	U	50
MTBE	1634-04-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Naphthalene	91-20-3	BRL	0.428	mg/kg	11.04.2019 19:03	U	50
n-Butylbenzene	104-51-8	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
n-Propylbenzene	103-65-1	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
o-Xylene	95-47-6	BRL	0.0428	mg/kg	11.04.2019 19:03	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Sec-Butylbenzene	135-98-8	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Styrene	100-42-5	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
tert-Butylbenzene	98-06-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Tetrachloroethylene	127-18-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Toluene	108-88-3	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Total Xylenes	1330-20-7	BRL	0.0428	mg/kg	11.04.2019 19:03	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Trichloroethene	79-01-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Trichlorofluoromethane	75-69-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Vinyl Acetate	108-05-4	BRL	0.428	mg/kg	11.04.2019 19:03	U	50
Vinyl Chloride	75-01-4	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
1,3-Butadiene	106-99-0	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Cyclohexane	110-82-7	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Dicyclopentadiene	77-73-6	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Methylcyclohexane	108-87-2	BRL	0.428	mg/kg	11.04.2019 19:03	U	50
n-Hexane	110-54-3	BRL	0.428	mg/kg	11.04.2019 19:03	U	50
4-Ethyltoluene	622-96-8	BRL	0.214	mg/kg	11.04.2019 19:03	U	50
Propene	115-07-1	BRL	0.214	mg/kg	11.04.2019 19:03	U	50

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD02-103119**
Lab Sample Id: 641882-015

Matrix: Soil
Date Collected: 10.31.2019 11:40

Date Received:11.04.2019 09:30

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106377

Date Prep: 11.04.2019 15:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	90	%	53-142	11.04.2019 19:03	
1,2-Dichloroethane-D4	98	%	56-150	11.04.2019 19:03	
Toluene-D8	103	%	70-130	11.04.2019 19:03	
4-Bromofluorobenzene	94	%	68-152	11.04.2019 19:03	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-7.5-8.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-016
Date Collected: 10.31.2019 11:45
Sample Depth: 7.5 - 8.0 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.127**	0.0169	mg/kg	11.05.2019 13:33		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.7**	1.75	mg/kg	11.05.2019 12:51		10
Barium	7440-39-3	**122**	3.51	mg/kg	11.05.2019 12:51		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.05.2019 12:51	U	10
Chromium	7440-47-3	**10.8**	3.51	mg/kg	11.05.2019 12:51		10
Lead	7439-92-1	**531**	1.75	mg/kg	11.05.2019 12:51		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.05.2019 12:51	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.05.2019 12:51	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-7.5-8.0**
Lab Sample Id: 641882-016

Matrix: Soil
Date Collected: 10.31.2019 11:45

Date Received:11.04.2019 09:30
Sample Depth: 7.5 - 8.0 ft

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 08:27

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.669	mg/kg	11.06.2019 00:05	U	200
Acenaphthylene	208-96-8	**1.84**	0.669	mg/kg	11.06.2019 00:05		200
Anthracene	120-12-7	**0.826**	0.669	mg/kg	11.06.2019 00:05		200
Benzo(a)anthracene	56-55-3	**2.79**	0.669	mg/kg	11.06.2019 00:05		200
Benzo(a)pyrene	50-32-8	**5.93**	0.669	mg/kg	11.06.2019 00:05		200
Benzo(b)fluoranthene	205-99-2	**6.16**	0.669	mg/kg	11.06.2019 00:05		200
Benzo(g,h,i)perylene	191-24-2	**7.41**	0.669	mg/kg	11.06.2019 00:05		200
Benzo(k)fluoranthene	207-08-9	**2.26**	0.669	mg/kg	11.06.2019 00:05		200
Chrysene	218-01-9	**3.59**	0.669	mg/kg	11.06.2019 00:05		200
Dibenz(a,h)Anthracene	53-70-3	BRL	0.669	mg/kg	11.06.2019 00:05	U	200
Fluoranthene	206-44-0	**11.5**	0.669	mg/kg	11.06.2019 00:05		200
Fluorene	86-73-7	BRL	0.669	mg/kg	11.06.2019 00:05	U	200
Indeno(1,2,3-c,d)Pyrene	193-39-5	**5.01**	0.669	mg/kg	11.06.2019 00:05		200
Naphthalene	91-20-3	BRL	6.69	mg/kg	11.06.2019 00:05	U	200
Phenanthrene	85-01-8	**7.20**	0.669	mg/kg	11.06.2019 00:05		200
Pyrene	129-00-0	**14.2**	0.669	mg/kg	11.06.2019 00:05		200

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	123	%	31-130	11.06.2019 00:05	
2-Fluorobiphenyl	123	%	51-133	11.06.2019 00:05	
Terphenyl-D14	146	%	46-137	11.06.2019 00:05	**

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-7.5-8.0** Matrix: Soil Date Received:11.04.2019 09:30

Lab Sample Id: 641882-016 Date Collected: 10.31.2019 11:45 Sample Depth: 7.5 - 8.0 ft

Analytical Method: TCLP Mercury by SW 1311/7470A Prep Method: SW7470P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.19.2019 10:10

Seq Number: 3107924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.000200	mg/L	11.19.2019 13:52	U	1

Analytical Method: TCLP Metal by SW 1311/6010C Prep Method: SW3010A

Tech: MLI % Moisture:

Analyst: DEP Date Prep: 11.19.2019 09:50

Seq Number: 3107971 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	BRL	0.100	mg/L	11.19.2019 15:22	U	1
Barium	7440-39-3	**1.17**	0.0500	mg/L	11.19.2019 15:22		1
Cadmium	7440-43-9	BRL	0.0500	mg/L	11.19.2019 15:22	U	1
Chromium	7440-47-3	BRL	0.0500	mg/L	11.19.2019 15:22	U	1
Lead	7439-92-1	**0.920**	0.0750	mg/L	11.19.2019 15:22		1
Selenium	7782-49-2	**0.393**	0.150	mg/L	11.19.2019 15:22		1
Silver	7440-22-4	BRL	0.150	mg/L	11.19.2019 15:22	U	1

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-10.0-10.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-017
Date Collected: 10.31.2019 11:50
Sample Depth: 10 - 10.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	11.05.2019 13:35	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.6**	1.92	mg/kg	11.05.2019 12:54		10
Barium	7440-39-3	**207**	3.85	mg/kg	11.05.2019 12:54		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.05.2019 12:54	U	10
Chromium	7440-47-3	**43.2**	3.85	mg/kg	11.05.2019 12:54		10
Lead	7439-92-1	**30.8**	1.92	mg/kg	11.05.2019 12:54		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.05.2019 12:54	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.05.2019 12:54	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-10.0-10.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-017	Date Collected:	10.31.2019 11:50	Sample Depth:	10 - 10.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 08:30	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	11.06.2019 00:23	U	10
Acenaphthylene	208-96-8	**0.0512**	0.0167	mg/kg	11.06.2019 00:23		10
Anthracene	120-12-7	**0.0258**	0.0167	mg/kg	11.06.2019 00:23		10
Benzo(a)anthracene	56-55-3	**0.0968**	0.0167	mg/kg	11.06.2019 00:23		10
Benzo(a)pyrene	50-32-8	**0.180**	0.0167	mg/kg	11.06.2019 00:23		10
Benzo(b)fluoranthene	205-99-2	**0.193**	0.0167	mg/kg	11.06.2019 00:23		10
Benzo(g,h,i)perylene	191-24-2	**0.216**	0.0167	mg/kg	11.06.2019 00:23		10
Benzo(k)fluoranthene	207-08-9	**0.0597**	0.0167	mg/kg	11.06.2019 00:23		10
Chrysene	218-01-9	**0.120**	0.0167	mg/kg	11.06.2019 00:23		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.06.2019 00:23	U	10
Fluoranthene	206-44-0	**0.368**	0.0167	mg/kg	11.06.2019 00:23		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	11.06.2019 00:23	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.149**	0.0167	mg/kg	11.06.2019 00:23		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	11.06.2019 00:23	U	10
Phenanthrene	85-01-8	**0.277**	0.0167	mg/kg	11.06.2019 00:23		10
Pyrene	129-00-0	**0.450**	0.0167	mg/kg	11.06.2019 00:23		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	104	%	31-130	11.06.2019 00:23	
2-Fluorobiphenyl	112	%	51-133	11.06.2019 00:23	
Terphenyl-D14	121	%	46-137	11.06.2019 00:23	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-15.0-15.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-018	Date Collected:	10.31.2019 11:55	Sample Depth:	15 - 15.5 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	11.05.2019 09:40	Basis:	Wet Weight
Seq Number:	3106489			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.05.2019 13:37	U	1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	0
Analyst:	DEP	Date Prep:	11.05.2019 10:00	Basis:	Dry Weight
Seq Number:	3106468			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**23.1**	1.75	mg/kg	11.05.2019 12:57		10
Barium	7440-39-3	**225**	3.51	mg/kg	11.05.2019 12:57		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.05.2019 12:57	U	10
Chromium	7440-47-3	**38.9**	3.51	mg/kg	11.05.2019 12:57		10
Lead	7439-92-1	**21.1**	1.75	mg/kg	11.05.2019 12:57		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.05.2019 12:57	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.05.2019 12:57	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B12-15.0-15.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-018	Date Collected:	10.31.2019 11:55	Sample Depth:	15 - 15.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 08:33	Basis:	Wet Weight
Seq Number:	3106513			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	11.06.2019 00:40	U	10
Acenaphthylene	208-96-8	**0.0552**	0.0167	mg/kg	11.06.2019 00:40		10
Anthracene	120-12-7	**0.0225**	0.0167	mg/kg	11.06.2019 00:40		10
Benzo(a)anthracene	56-55-3	**0.0910**	0.0167	mg/kg	11.06.2019 00:40		10
Benzo(a)pyrene	50-32-8	**0.148**	0.0167	mg/kg	11.06.2019 00:40		10
Benzo(b)fluoranthene	205-99-2	**0.172**	0.0167	mg/kg	11.06.2019 00:40		10
Benzo(g,h,i)perylene	191-24-2	**0.175**	0.0167	mg/kg	11.06.2019 00:40		10
Benzo(k)fluoranthene	207-08-9	**0.0507**	0.0167	mg/kg	11.06.2019 00:40		10
Chrysene	218-01-9	**0.111**	0.0167	mg/kg	11.06.2019 00:40		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.06.2019 00:40	U	10
Fluoranthene	206-44-0	**0.338**	0.0167	mg/kg	11.06.2019 00:40		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	11.06.2019 00:40	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.123**	0.0167	mg/kg	11.06.2019 00:40		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	11.06.2019 00:40	U	10
Phenanthrene	85-01-8	**0.285**	0.0167	mg/kg	11.06.2019 00:40		10
Pyrene	129-00-0	**0.400**	0.0167	mg/kg	11.06.2019 00:40		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	113	%	31-130	11.06.2019 00:40	
2-Fluorobiphenyl	120	%	51-133	11.06.2019 00:40	
Terphenyl-D14	121	%	46-137	11.06.2019 00:40	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-19.5-20**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-019
Date Collected: 10.31.2019 12:15
Sample Depth: 19.5 - 20 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	11.05.2019 13:39	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture: 0
Analyst: DEP
Date Prep: 11.05.2019 10:00
Basis: Dry Weight
Seq Number: 3106468
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**18.1**	1.92	mg/kg	11.05.2019 13:00		10
Barium	7440-39-3	**376**	3.85	mg/kg	11.05.2019 13:00		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.05.2019 13:00	U	10
Chromium	7440-47-3	**49.2**	3.85	mg/kg	11.05.2019 13:00		10
Lead	7439-92-1	**62.8**	1.92	mg/kg	11.05.2019 13:00		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.05.2019 13:00	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.05.2019 13:00	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-19.5-20**
Lab Sample Id: 641882-019

Matrix: Soil
Date Collected: 10.31.2019 12:15

Date Received:11.04.2019 09:30
Sample Depth: 19.5 - 20 ft

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106513

Date Prep: 11.05.2019 08:36

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0333	mg/kg	11.06.2019 00:57	U	20
Acenaphthylene	208-96-8	**0.398**	0.0333	mg/kg	11.06.2019 00:57		20
Anthracene	120-12-7	**0.177**	0.0333	mg/kg	11.06.2019 00:57		20
Benzo(a)anthracene	56-55-3	**0.693**	0.0333	mg/kg	11.06.2019 00:57		20
Benzo(a)pyrene	50-32-8	**1.38**	0.0333	mg/kg	11.06.2019 00:57		20
Benzo(b)fluoranthene	205-99-2	**1.49**	0.0333	mg/kg	11.06.2019 00:57		20
Benzo(g,h,i)perylene	191-24-2	**1.68**	0.0333	mg/kg	11.06.2019 00:57		20
Benzo(k)fluoranthene	207-08-9	**0.453**	0.0333	mg/kg	11.06.2019 00:57		20
Chrysene	218-01-9	**0.899**	0.0333	mg/kg	11.06.2019 00:57		20
Dibenz(a,h)Anthracene	53-70-3	**0.165**	0.0333	mg/kg	11.06.2019 00:57		20
Fluoranthene	206-44-0	**2.68**	0.0333	mg/kg	11.06.2019 00:57		20
Fluorene	86-73-7	**0.0597**	0.0333	mg/kg	11.06.2019 00:57		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.16**	0.0333	mg/kg	11.06.2019 00:57		20
Naphthalene	91-20-3	BRL	0.333	mg/kg	11.06.2019 00:57	U	20
Phenanthrene	85-01-8	**1.73**	0.0333	mg/kg	11.06.2019 00:57		20
Pyrene	129-00-0	**3.18**	0.0333	mg/kg	11.06.2019 00:57		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	114	%	31-130	11.06.2019 00:57	
2-Fluorobiphenyl	120	%	51-133	11.06.2019 00:57	
Terphenyl-D14	127	%	46-137	11.06.2019 00:57	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-24.5-25.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-020
Date Collected: 10.31.2019 13:50
Sample Depth: 24.5 - 25 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.05.2019 13:41	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**4.16**	1.69	mg/kg	11.05.2019 17:25		10
Barium	7440-39-3	**44.2**	3.39	mg/kg	11.05.2019 17:25		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.05.2019 17:25	U	10
Chromium	7440-47-3	**23.1**	3.39	mg/kg	11.05.2019 17:25		10
Lead	7439-92-1	**8.74**	1.69	mg/kg	11.05.2019 17:25		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.05.2019 17:25	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.05.2019 17:25	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B12-24.5-25.0**
Lab Sample Id: 641882-020

Matrix: Soil
Date Collected: 10.31.2019 13:50

Date Received:11.04.2019 09:30
Sample Depth: 24.5 - 25 ft

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106591

Date Prep: 11.05.2019 13:39

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00187**	0.00167	mg/kg	11.06.2019 01:31		1
Acenaphthylene	208-96-8	**0.0199**	0.00167	mg/kg	11.06.2019 01:31		1
Anthracene	120-12-7	**0.00743**	0.00167	mg/kg	11.06.2019 01:31		1
Benzo(a)anthracene	56-55-3	**0.0318**	0.00167	mg/kg	11.06.2019 01:31		1
Benzo(a)pyrene	50-32-8	**0.0675**	0.00167	mg/kg	11.06.2019 01:31		1
Benzo(b)fluoranthene	205-99-2	**0.0709**	0.00167	mg/kg	11.06.2019 01:31		1
Benzo(g,h,i)perylene	191-24-2	**0.0806**	0.00167	mg/kg	11.06.2019 01:31		1
Benzo(k)fluoranthene	207-08-9	**0.0187**	0.00167	mg/kg	11.06.2019 01:31		1
Chrysene	218-01-9	**0.0416**	0.00167	mg/kg	11.06.2019 01:31		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.2019 01:31	U	1
Fluoranthene	206-44-0	**0.119**	0.00167	mg/kg	11.06.2019 01:31		1
Fluorene	86-73-7	**0.00213**	0.00167	mg/kg	11.06.2019 01:31		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0541**	0.00167	mg/kg	11.06.2019 01:31		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.2019 01:31	U	1
Phenanthrene	85-01-8	**0.0593**	0.00167	mg/kg	11.06.2019 01:31		1
Pyrene	129-00-0	**0.150**	0.00167	mg/kg	11.06.2019 01:31		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	120	%	31-130	11.06.2019 01:31	
2-Fluorobiphenyl	122	%	51-133	11.06.2019 01:31	
Terphenyl-D14	126	%	46-137	11.06.2019 01:31	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B23-25-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-021	Date Collected:	10.31.2019 14:35	Sample Depth:	2.5 - 3.0 ft

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	11.05.2019 10:50	Basis:	Wet Weight
Seq Number:	3106487			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0269**	0.0196	mg/kg	11.05.2019 14:01		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.05.2019 11:05	Basis:	Wet Weight
Seq Number:	3106537			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.8**	1.75	mg/kg	11.05.2019 17:28		10
Barium	7440-39-3	**477**	3.51	mg/kg	11.05.2019 17:28		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.05.2019 17:28	U	10
Chromium	7440-47-3	**12.1**	3.51	mg/kg	11.05.2019 17:28		10
Lead	7439-92-1	**69.0**	1.75	mg/kg	11.05.2019 17:28		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.05.2019 17:28	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.05.2019 17:28	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B23-25-3.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-021	Date Collected:	10.31.2019 14:35	Sample Depth:	2.5 - 3.0 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 13:15	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0334	mg/kg	11.06.2019 01:48	U	20
Acenaphthylene	208-96-8	**0.0449**	0.0334	mg/kg	11.06.2019 01:48		20
Anthracene	120-12-7	BRL	0.0334	mg/kg	11.06.2019 01:48	U	20
Benzo(a)anthracene	56-55-3	**0.117**	0.0334	mg/kg	11.06.2019 01:48		20
Benzo(a)pyrene	50-32-8	**0.213**	0.0334	mg/kg	11.06.2019 01:48		20
Benzo(b)fluoranthene	205-99-2	**0.237**	0.0334	mg/kg	11.06.2019 01:48		20
Benzo(g,h,i)perylene	191-24-2	**0.259**	0.0334	mg/kg	11.06.2019 01:48		20
Benzo(k)fluoranthene	207-08-9	**0.0722**	0.0334	mg/kg	11.06.2019 01:48		20
Chrysene	218-01-9	**0.143**	0.0334	mg/kg	11.06.2019 01:48		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0334	mg/kg	11.06.2019 01:48	U	20
Fluoranthene	206-44-0	**0.423**	0.0334	mg/kg	11.06.2019 01:48		20
Fluorene	86-73-7	BRL	0.0334	mg/kg	11.06.2019 01:48	U	20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.177**	0.0334	mg/kg	11.06.2019 01:48		20
Naphthalene	91-20-3	BRL	0.334	mg/kg	11.06.2019 01:48	U	20
Phenanthrene	85-01-8	**0.262**	0.0334	mg/kg	11.06.2019 01:48		20
Pyrene	129-00-0	**0.504**	0.0334	mg/kg	11.06.2019 01:48		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	86	%	31-130	11.06.2019 01:48	
2-Fluorobiphenyl	101	%	51-133	11.06.2019 01:48	
Terphenyl-D14	114	%	46-137	11.06.2019 01:48	

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APS, Phoenix, AZ

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Sample Id: **D-FD03-103119** Matrix: Soil Date Received:11.04.2019 09:30

Lab Sample Id: 641882-022 Date Collected: 10.31.2019 14:45

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.05.2019 10:50 Basis: Wet Weight

Seq Number: 3106487 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0332**	0.0200	mg/kg	11.05.2019 14:03		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.05.2019 11:05 Basis: Wet Weight

Seq Number: 3106537 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.3**	1.85	mg/kg	11.05.2019 17:31		10
Barium	7440-39-3	**319**	3.70	mg/kg	11.05.2019 17:31		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 17:31	U	10
Chromium	7440-47-3	**14.0**	3.70	mg/kg	11.05.2019 17:31		10
Lead	7439-92-1	**46.4**	1.85	mg/kg	11.05.2019 17:31		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 17:31	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 17:31	U	10

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APS, Phoenix, AZ

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Sample Id: **D-FD03-103119**
Lab Sample Id: 641882-022

Matrix: Soil
Date Collected: 10.31.2019 14:45

Date Received:11.04.2019 09:30

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106591

Date Prep: 11.05.2019 12:18

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0333	mg/kg	11.06.2019 02:05	U	20
Acenaphthylene	208-96-8	**0.0699**	0.0333	mg/kg	11.06.2019 02:05		20
Anthracene	120-12-7	**0.0455**	0.0333	mg/kg	11.06.2019 02:05		20
Benzo(a)anthracene	56-55-3	**0.206**	0.0333	mg/kg	11.06.2019 02:05		20
Benzo(a)pyrene	50-32-8	**0.322**	0.0333	mg/kg	11.06.2019 02:05		20
Benzo(b)fluoranthene	205-99-2	**0.390**	0.0333	mg/kg	11.06.2019 02:05		20
Benzo(g,h,i)perylene	191-24-2	**0.337**	0.0333	mg/kg	11.06.2019 02:05		20
Benzo(k)fluoranthene	207-08-9	**0.0828**	0.0333	mg/kg	11.06.2019 02:05		20
Chrysene	218-01-9	**0.243**	0.0333	mg/kg	11.06.2019 02:05		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0333	mg/kg	11.06.2019 02:05	U	20
Fluoranthene	206-44-0	**0.608**	0.0333	mg/kg	11.06.2019 02:05		20
Fluorene	86-73-7	BRL	0.0333	mg/kg	11.06.2019 02:05	U	20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.244**	0.0333	mg/kg	11.06.2019 02:05		20
Naphthalene	91-20-3	BRL	0.333	mg/kg	11.06.2019 02:05	U	20
Phenanthrene	85-01-8	**0.323**	0.0333	mg/kg	11.06.2019 02:05		20
Pyrene	129-00-0	**0.724**	0.0333	mg/kg	11.06.2019 02:05		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	59	%	31-130	11.06.2019 02:05	
2-Fluorobiphenyl	69	%	51-133	11.06.2019 02:05	
Terphenyl-D14	95	%	46-137	11.06.2019 02:05	

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APS, Phoenix, AZ

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Sample Id: **D-B23-5.0-5.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-023
Date Collected: 10.31.2019 15:05
Sample Depth: 5.0 - 5.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 09:40
Basis: Wet Weight
Seq Number: 3106489
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.05.2019 13:12	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**26.0**	1.89	mg/kg	11.05.2019 17:05		10
Barium	7440-39-3	**764**	3.77	mg/kg	11.05.2019 17:05		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.05.2019 17:05	U	10
Chromium	7440-47-3	**20.7**	3.77	mg/kg	11.05.2019 17:05		10
Lead	7439-92-1	**18.7**	1.89	mg/kg	11.05.2019 17:05		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.05.2019 17:05	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.05.2019 17:05	U	10

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APS, Phoenix, AZ

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Sample Id:	**D-B23-5.0-5.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-023	Date Collected:	10.31.2019 15:05	Sample Depth:	5.0 - 5.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 12:12	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.2019 10:18	U	1
Acenaphthylene	208-96-8	**0.00264**	0.00167	mg/kg	11.06.2019 10:18		1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.2019 10:18	U	1
Benzo(a)anthracene	56-55-3	**0.00635**	0.00167	mg/kg	11.06.2019 10:18		1
Benzo(a)pyrene	50-32-8	**0.0133**	0.00167	mg/kg	11.06.2019 10:18		1
Benzo(b)fluoranthene	205-99-2	**0.0148**	0.00167	mg/kg	11.06.2019 10:18		1
Benzo(g,h,i)perylene	191-24-2	**0.0194**	0.00167	mg/kg	11.06.2019 10:18		1
Benzo(k)fluoranthene	207-08-9	**0.00424**	0.00167	mg/kg	11.06.2019 10:18		1
Chrysene	218-01-9	**0.00828**	0.00167	mg/kg	11.06.2019 10:18		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.2019 10:18	U	1
Fluoranthene	206-44-0	**0.0251**	0.00167	mg/kg	11.06.2019 10:18		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.2019 10:18	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0125**	0.00167	mg/kg	11.06.2019 10:18		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.2019 10:18	U	1
Phenanthrene	85-01-8	**0.0149**	0.00167	mg/kg	11.06.2019 10:18		1
Pyrene	129-00-0	**0.0293**	0.00167	mg/kg	11.06.2019 10:18		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	107	%	31-130	11.06.2019 10:18	
2-Fluorobiphenyl	109	%	51-133	11.06.2019 10:18	
Terphenyl-D14	109	%	46-137	11.06.2019 10:18	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B23-7.5-8.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-024
Date Collected: 10.31.2019 15:30
Sample Depth: 7.5 - 8.0 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 10:50
Basis: Wet Weight
Seq Number: 3106487
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.05.2019 14:05	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**23.9**	1.85	mg/kg	11.05.2019 17:34		10
Barium	7440-39-3	**91.8**	3.70	mg/kg	11.05.2019 17:34		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 17:34	U	10
Chromium	7440-47-3	**14.6**	3.70	mg/kg	11.05.2019 17:34		10
Lead	7439-92-1	**9.97**	1.85	mg/kg	11.05.2019 17:34		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 17:34	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 17:34	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B23-7.5-8.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-024	Date Collected:	10.31.2019 15:30	Sample Depth:	7.5 - 8.0 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 12:21	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.2019 03:13	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.06.2019 03:13	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.2019 03:13	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.06.2019 03:13	U	1
Benzo(a)pyrene	50-32-8	**0.00222**	0.00167	mg/kg	11.06.2019 03:13		1
Benzo(b)fluoranthene	205-99-2	**0.00248**	0.00167	mg/kg	11.06.2019 03:13		1
Benzo(g,h,i)perylene	191-24-2	**0.00290**	0.00167	mg/kg	11.06.2019 03:13		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.06.2019 03:13	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.06.2019 03:13	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.2019 03:13	U	1
Fluoranthene	206-44-0	**0.00377**	0.00167	mg/kg	11.06.2019 03:13		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.2019 03:13	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00187**	0.00167	mg/kg	11.06.2019 03:13		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.2019 03:13	U	1
Phenanthrene	85-01-8	**0.00226**	0.00167	mg/kg	11.06.2019 03:13		1
Pyrene	129-00-0	**0.00469**	0.00167	mg/kg	11.06.2019 03:13		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	103	%	31-130	11.06.2019 03:13	
2-Fluorobiphenyl	105	%	51-133	11.06.2019 03:13	
Terphenyl-D14	117	%	46-137	11.06.2019 03:13	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B23-9.5-10.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-025
Date Collected: 10.31.2019 15:50
Sample Depth: 9.5 - 10.0 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 10:50
Basis: Wet Weight
Seq Number: 3106487
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.05.2019 14:07	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.3**	1.69	mg/kg	11.05.2019 17:37		10
Barium	7440-39-3	**84.6**	3.39	mg/kg	11.05.2019 17:37		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.05.2019 17:37	U	10
Chromium	7440-47-3	**7.00**	3.39	mg/kg	11.05.2019 17:37		10
Lead	7439-92-1	**10.3**	1.69	mg/kg	11.05.2019 17:37		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.05.2019 17:37	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.05.2019 17:37	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B23-9.5-10.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-025	Date Collected:	10.31.2019 15:50	Sample Depth:	9.5 - 10.0 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 12:24	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.06.2019 03:30	U	1
Acenaphthylene	208-96-8	**0.00183**	0.00166	mg/kg	11.06.2019 03:30		1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.06.2019 03:30	U	1
Benzo(a)anthracene	56-55-3	**0.00314**	0.00166	mg/kg	11.06.2019 03:30		1
Benzo(a)pyrene	50-32-8	**0.00579**	0.00166	mg/kg	11.06.2019 03:30		1
Benzo(b)fluoranthene	205-99-2	**0.00713**	0.00166	mg/kg	11.06.2019 03:30		1
Benzo(g,h,i)perylene	191-24-2	**0.00787**	0.00166	mg/kg	11.06.2019 03:30		1
Benzo(k)fluoranthene	207-08-9	**0.00175**	0.00166	mg/kg	11.06.2019 03:30		1
Chrysene	218-01-9	**0.00392**	0.00166	mg/kg	11.06.2019 03:30		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.06.2019 03:30	U	1
Fluoranthene	206-44-0	**0.0101**	0.00166	mg/kg	11.06.2019 03:30		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.06.2019 03:30	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00523**	0.00166	mg/kg	11.06.2019 03:30		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.06.2019 03:30	U	1
Phenanthrene	85-01-8	**0.00603**	0.00166	mg/kg	11.06.2019 03:30		1
Pyrene	129-00-0	**0.0122**	0.00166	mg/kg	11.06.2019 03:30		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	103	%	31-130	11.06.2019 03:30	
2-Fluorobiphenyl	104	%	51-133	11.06.2019 03:30	
Terphenyl-D14	110	%	46-137	11.06.2019 03:30	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B23-14.5-15.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-026
Date Collected: 10.31.2019 16:10
Sample Depth: 14.5 - 15.0 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 10:50
Basis: Wet Weight
Seq Number: 3106487
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.05.2019 14:22	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**42.5**	1.85	mg/kg	11.05.2019 17:40		10
Barium	7440-39-3	**53.3**	3.70	mg/kg	11.05.2019 17:40		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 17:40	U	10
Chromium	7440-47-3	**11.3**	3.70	mg/kg	11.05.2019 17:40		10
Lead	7439-92-1	**10.6**	1.85	mg/kg	11.05.2019 17:40		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 17:40	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 17:40	U	10

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Sample Id:	**D-B23-14.5-15.0**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-026	Date Collected:	10.31.2019 16:10	Sample Depth:	14.5 - 15.0 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 12:27	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.2019 11:40	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.06.2019 11:40	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.2019 11:40	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.06.2019 11:40	U	1
Benzo(a)pyrene	50-32-8	**0.00296**	0.00167	mg/kg	11.06.2019 11:40		1
Benzo(b)fluoranthene	205-99-2	**0.00327**	0.00167	mg/kg	11.06.2019 11:40		1
Benzo(g,h,i)perylene	191-24-2	**0.00448**	0.00167	mg/kg	11.06.2019 11:40		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.06.2019 11:40	U	1
Chrysene	218-01-9	**0.00179**	0.00167	mg/kg	11.06.2019 11:40		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.2019 11:40	U	1
Fluoranthene	206-44-0	**0.00499**	0.00167	mg/kg	11.06.2019 11:40		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.2019 11:40	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00286**	0.00167	mg/kg	11.06.2019 11:40		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.2019 11:40	U	1
Phenanthrene	85-01-8	**0.00270**	0.00167	mg/kg	11.06.2019 11:40		1
Pyrene	129-00-0	**0.00633**	0.00167	mg/kg	11.06.2019 11:40		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	105	%	31-130	11.06.2019 11:40	
2-Fluorobiphenyl	107	%	51-133	11.06.2019 11:40	
Terphenyl-D14	112	%	46-137	11.06.2019 11:40	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B23-19.5-20.0**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-027
Date Collected: 10.31.2019 16:30
Sample Depth: 19.5 - 20.0 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 10:50
Basis: Wet Weight
Seq Number: 3106487
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.05.2019 14:09	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.6**	1.67	mg/kg	11.05.2019 17:43		10
Barium	7440-39-3	**88.8**	3.33	mg/kg	11.05.2019 17:43		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.05.2019 17:43	U	10
Chromium	7440-47-3	**9.66**	3.33	mg/kg	11.05.2019 17:43		10
Lead	7439-92-1	**12.7**	1.67	mg/kg	11.05.2019 17:43		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.05.2019 17:43	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.05.2019 17:43	U	10

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B23-19.5-20.0**
Lab Sample Id: 641882-027

Matrix: Soil
Date Collected: 10.31.2019 16:30

Date Received:11.04.2019 09:30
Sample Depth: 19.5 - 20.0 ft

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106591

Date Prep: 11.05.2019 12:30

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.2019 11:57	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.06.2019 11:57	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.2019 11:57	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.06.2019 11:57	U	1
Benzo(a)pyrene	50-32-8	**0.00292**	0.00167	mg/kg	11.06.2019 11:57		1
Benzo(b)fluoranthene	205-99-2	**0.00319**	0.00167	mg/kg	11.06.2019 11:57		1
Benzo(g,h,i)perylene	191-24-2	**0.00461**	0.00167	mg/kg	11.06.2019 11:57		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.06.2019 11:57	U	1
Chrysene	218-01-9	**0.00176**	0.00167	mg/kg	11.06.2019 11:57		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.2019 11:57	U	1
Fluoranthene	206-44-0	**0.00495**	0.00167	mg/kg	11.06.2019 11:57		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.2019 11:57	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00285**	0.00167	mg/kg	11.06.2019 11:57		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.2019 11:57	U	1
Phenanthrene	85-01-8	**0.00316**	0.00167	mg/kg	11.06.2019 11:57		1
Pyrene	129-00-0	**0.00624**	0.00167	mg/kg	11.06.2019 11:57		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	111	%	31-130	11.06.2019 11:57	
2-Fluorobiphenyl	113	%	51-133	11.06.2019 11:57	
Terphenyl-D14	113	%	46-137	11.06.2019 11:57	

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APS, Phoenix, AZ

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Sample Id: **D-B25-10.0-10.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-028
Date Collected: 10.31.2019 09:30
Sample Depth: 10.0 - 10.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 10:50
Basis: Wet Weight
Seq Number: 3106487
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.05.2019 14:10	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**23.7**	1.92	mg/kg	11.05.2019 17:46		10
Barium	7440-39-3	**165**	3.85	mg/kg	11.05.2019 17:46		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.05.2019 17:46	U	10
Chromium	7440-47-3	**14.7**	3.85	mg/kg	11.05.2019 17:46		10
Lead	7439-92-1	**11.9**	1.92	mg/kg	11.05.2019 17:46		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.05.2019 17:46	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.05.2019 17:46	U	10

Analytical Method: FOC By ASTM D2974
Tech: YAV
% Moisture:
Analyst: YAV
Basis: Wet Weight
Seq Number: 3106488

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**1.30**	0.0100	%	11.05.2019 15:45	+	1

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APS, Phoenix, AZ

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Sample Id:	**D-B25-10.0-10.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-028	Date Collected:	10.31.2019 09:30	Sample Depth:	10.0 - 10.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 12:33	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.2019 12:13	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.06.2019 12:13	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	101	%	31-130	11.06.2019 12:13	
2-Fluorobiphenyl	101	%	51-133	11.06.2019 12:13	
Terphenyl-D14	108	%	46-137	11.06.2019 12:13	

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APS, Phoenix, AZ

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Sample Id:	**D-B25-15.0-15.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-029	Date Collected:	10.31.2019 10:50	Sample Depth:	15.0 - 15.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 12:36	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.06.2019 12:29	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.06.2019 12:29	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	100	%	31-130	11.06.2019 12:29	
2-Fluorobiphenyl	102	%	51-133	11.06.2019 12:29	
Terphenyl-D14	110	%	46-137	11.06.2019 12:29	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B25-20.0-20.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-030
Date Collected: 10.31.2019 11:25
Sample Depth: 20.0 - 20.5 ft

Analytical Method: FOC By ASTM D2974
Tech: YAV
Analyst: YAV
Seq Number: 3106488
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**1.20**	0.0100	%	11.05.2019 15:45	+	1

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106591
Prep Method: SW3550
% Moisture:
Date Prep: 11.05.2019 12:39
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.2019 12:48	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.06.2019 12:48	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.2019 12:48	U	1
Benzo(a)anthracene	56-55-3	**0.00258**	0.00167	mg/kg	11.06.2019 12:48		1
Benzo(a)pyrene	50-32-8	**0.00369**	0.00167	mg/kg	11.06.2019 12:48		1
Benzo(b)fluoranthene	205-99-2	**0.00466**	0.00167	mg/kg	11.06.2019 12:48		1
Benzo(g,h,i)perylene	191-24-2	**0.00446**	0.00167	mg/kg	11.06.2019 12:48		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.06.2019 12:48	U	1
Chrysene	218-01-9	**0.00303**	0.00167	mg/kg	11.06.2019 12:48		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.2019 12:48	U	1
Fluoranthene	206-44-0	**0.00704**	0.00167	mg/kg	11.06.2019 12:48		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.2019 12:48	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00309**	0.00167	mg/kg	11.06.2019 12:48		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.2019 12:48	U	1
Phenanthrene	85-01-8	**0.00568**	0.00167	mg/kg	11.06.2019 12:48		1
Pyrene	129-00-0	**0.00828**	0.00167	mg/kg	11.06.2019 12:48		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	108	%	31-130	11.06.2019 12:48	
2-Fluorobiphenyl	110	%	51-133	11.06.2019 12:48	
Terphenyl-D14	112	%	46-137	11.06.2019 12:48	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B25-25.0-25.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-031
Date Collected: 10.31.2019 11:45
Sample Depth: 25.0 - 25.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 10:50
Basis: Wet Weight
Seq Number: 3106487
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.05.2019 14:12	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**5.23**	1.96	mg/kg	11.05.2019 17:49		10
Barium	7440-39-3	**35.2**	3.92	mg/kg	11.05.2019 17:49		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.05.2019 17:49	U	10
Chromium	7440-47-3	**21.0**	3.92	mg/kg	11.05.2019 17:49		10
Lead	7439-92-1	**10.9**	1.96	mg/kg	11.05.2019 17:49		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.05.2019 17:49	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.05.2019 17:49	U	10

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APS, Phoenix, AZ

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Sample Id:	**D-B25-25.0-25.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-031	Date Collected:	10.31.2019 11:45	Sample Depth:	25.0 - 25.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 12:42	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.06.2019 14:11	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.06.2019 14:11	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	109	%	31-130	11.06.2019 14:11	
2-Fluorobiphenyl	113	%	51-133	11.06.2019 14:11	
Terphenyl-D14	124	%	46-137	11.06.2019 14:11	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B25-30.0-30.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-032
Date Collected: 10.31.2019 13:20
Sample Depth: 30.0 - 30.5 ft

Analytical Method: FOC By ASTM D2974
Tech: YAV
Analyst: YAV
Seq Number: 3106488
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**5.80**	0.0100	%	11.05.2019 15:45	+	1

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106591
Date Prep: 11.05.2019 12:45
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.2019 14:28	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.06.2019 14:28	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	86	%	31-130	11.06.2019 14:28	
2-Fluorobiphenyl	91	%	51-133	11.06.2019 14:28	
Terphenyl-D14	101	%	46-137	11.06.2019 14:28	

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APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B25-40.0-40.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-033
Date Collected: 10.31.2019 16:20
Sample Depth: 40.0 - 40.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 10:50
Basis: Wet Weight
Seq Number: 3106487
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.05.2019 14:18	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.22**	1.85	mg/kg	11.05.2019 17:52		10
Barium	7440-39-3	**55.4**	3.70	mg/kg	11.05.2019 17:52		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 17:52	U	10
Chromium	7440-47-3	**11.0**	3.70	mg/kg	11.05.2019 17:52		10
Lead	7439-92-1	**10.1**	1.85	mg/kg	11.05.2019 17:52		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 17:52	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 17:52	U	10

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APS, Phoenix, AZ

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Sample Id:	**D-B25-40.0-40.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-033	Date Collected:	10.31.2019 16:20	Sample Depth:	40.0 - 40.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 12:48	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.06.2019 14:45	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.06.2019 14:45	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	101	%	31-130	11.06.2019 14:45	
2-Fluorobiphenyl	109	%	51-133	11.06.2019 14:45	
Terphenyl-D14	114	%	46-137	11.06.2019 14:45	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD04-103119**
Lab Sample Id: 641882-034
Matrix: Soil
Date Collected: 10.31.2019 17:00
Date Received:11.04.2019 09:30

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106487
Date Prep: 11.05.2019 10:50
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.05.2019 13:48	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106537
Date Prep: 11.05.2019 11:05
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.13**	1.85	mg/kg	11.05.2019 18:01		10
Barium	7440-39-3	**68.3**	3.70	mg/kg	11.05.2019 18:01		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.05.2019 18:01	U	10
Chromium	7440-47-3	**14.4**	3.70	mg/kg	11.05.2019 18:01		10
Lead	7439-92-1	**15.9**	1.85	mg/kg	11.05.2019 18:01		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.05.2019 18:01	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.05.2019 18:01	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-FD04-103119**
Lab Sample Id: 641882-034

Matrix: Soil
Date Collected: 10.31.2019 17:00

Date Received:11.04.2019 09:30

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3106591

Date Prep: 11.05.2019 12:51

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.05.2019 18:32	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.05.2019 18:32	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	98	%	31-130	11.05.2019 18:32	
2-Fluorobiphenyl	100	%	51-133	11.05.2019 18:32	
Terphenyl-D14	104	%	46-137	11.05.2019 18:32	

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id: **D-B24-10.0-10.5**
Matrix: Soil
Date Received:11.04.2019 09:30
Lab Sample Id: 641882-035
Date Collected: 10.30.2019 15:40
Sample Depth: 10 - 10.5 ft

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.05.2019 10:50
Basis: Wet Weight
Seq Number: 3106487
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.05.2019 14:20	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.05.2019 11:05
Basis: Wet Weight
Seq Number: 3106537
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.6**	1.72	mg/kg	11.05.2019 18:13		10
Barium	7440-39-3	**80.0**	3.45	mg/kg	11.05.2019 18:13		10
Cadmium	7440-43-9	BRL	1.72	mg/kg	11.05.2019 18:13	U	10
Chromium	7440-47-3	**9.03**	3.45	mg/kg	11.05.2019 18:13		10
Lead	7439-92-1	**77.3**	1.72	mg/kg	11.05.2019 18:13		10
Selenium	7782-49-2	BRL	1.72	mg/kg	11.05.2019 18:13	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	11.05.2019 18:13	U	10

Certificate of Analytical Results 641882

APS, Phoenix, AZ

APS MPG Douglas, AZ

Sample Id:	**D-B24-10.0-10.5**	Matrix:	Soil	Date Received:	11.04.2019 09:30
Lab Sample Id:	641882-035	Date Collected:	10.30.2019 15:40	Sample Depth:	10 - 10.5 ft
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.05.2019 13:00	Basis:	Wet Weight
Seq Number:	3106591			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0334	mg/kg	11.06.2019 02:39	U	20
Acenaphthylene	208-96-8	**0.363**	0.0334	mg/kg	11.06.2019 02:39		20
Anthracene	120-12-7	**0.162**	0.0334	mg/kg	11.06.2019 02:39		20
Benzo(a)anthracene	56-55-3	**0.538**	0.0334	mg/kg	11.06.2019 02:39		20
Benzo(a)pyrene	50-32-8	**1.22**	0.0334	mg/kg	11.06.2019 02:39		20
Benzo(b)fluoranthene	205-99-2	**1.24**	0.0334	mg/kg	11.06.2019 02:39		20
Benzo(g,h,i)perylene	191-24-2	**1.44**	0.0334	mg/kg	11.06.2019 02:39		20
Benzo(k)fluoranthene	207-08-9	**0.341**	0.0334	mg/kg	11.06.2019 02:39		20
Chrysene	218-01-9	**0.730**	0.0334	mg/kg	11.06.2019 02:39		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0334	mg/kg	11.06.2019 02:39	U	20
Fluoranthene	206-44-0	**2.23**	0.0334	mg/kg	11.06.2019 02:39		20
Fluorene	86-73-7	**0.0503**	0.0334	mg/kg	11.06.2019 02:39		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.958**	0.0334	mg/kg	11.06.2019 02:39		20
Naphthalene	91-20-3	BRL	0.334	mg/kg	11.06.2019 02:39	U	20
Phenanthrene	85-01-8	**1.38**	0.0334	mg/kg	11.06.2019 02:39		20
Pyrene	129-00-0	**2.75**	0.0334	mg/kg	11.06.2019 02:39		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	78	%	31-130	11.06.2019 02:39	
2-Fluorobiphenyl	80	%	51-133	11.06.2019 02:39	
Terphenyl-D14	87	%	46-137	11.06.2019 02:39	

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Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3106545 Matrix: Solid Date Prep: 11.05.2019
MB Sample Id: 7689652-1-BLK LCS Sample Id: 7689652-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Cyanide, Total	<0.0298	1.20	1.14	95	85-115	mg/kg	11.05.2019 15:19	

Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3106545 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-004 MS Sample Id: 641882-004 S MSD Sample Id: 641882-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	0.0668	2.66	0.835	29	0.843	29	85-115	1	20	mg/kg	11.05.2019 15:26	X

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106489 Matrix: Solid Date Prep: 11.05.2019
MB Sample Id: 7689616-1-BLK LCS Sample Id: 7689616-1-BKS LCSD Sample Id: 7689616-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00384	0.200	0.191	96	0.191	96	80-120	0	20	mg/kg	11.05.2019 12:35	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106487 Matrix: Solid Date Prep: 11.05.2019
MB Sample Id: 7689619-1-BLK LCS Sample Id: 7689619-1-BKS LCSD Sample Id: 7689619-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00384	0.200	0.194	97	0.196	98	80-120	1	20	mg/kg	11.05.2019 13:44	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106489 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-004 MS Sample Id: 641882-004 S MSD Sample Id: 641882-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00608	0.185	0.153	79	0.155	82	75-125	1	20	mg/kg	11.05.2019 12:40	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106489 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-023 MS Sample Id: 641882-023 S MSD Sample Id: 641882-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0114	0.189	0.185	92	0.183	93	75-125	1	20	mg/kg	11.05.2019 13:14	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106487 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-026 MS Sample Id: 641882-026 S MSD Sample Id: 641882-026 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00461	0.185	0.182	96	0.182	96	75-125	0	20	mg/kg	11.05.2019 14:23	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106487 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-034 MS Sample Id: 641882-034 S MSD Sample Id: 641882-034 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00548	0.185	0.185	97	0.188	97	75-125	2	20	mg/kg	11.05.2019 13:50	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106468 Matrix: Solid Date Prep: 11.05.2019
MB Sample Id: 7689613-1-BLK LCS Sample Id: 7689613-1-BKS LCSD Sample Id: 7689613-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	9.62	96	9.80	98	80-120	2	20	mg/kg	11.05.2019 11:40	
Barium	<0.400	10.0	9.59	96	9.49	95	80-120	1	20	mg/kg	11.05.2019 11:40	
Cadmium	<0.200	10.0	9.75	98	9.70	97	80-120	1	20	mg/kg	11.05.2019 11:40	
Chromium	<0.400	10.0	9.64	96	9.64	96	80-120	0	20	mg/kg	11.05.2019 11:40	
Lead	<0.200	10.0	9.88	99	9.78	98	80-120	1	20	mg/kg	11.05.2019 11:40	
Selenium	<0.200	10.0	9.79	98	9.88	99	80-120	1	20	mg/kg	11.05.2019 11:40	
Silver	<0.200	5.00	5.04	101	4.99	100	80-120	1	20	mg/kg	11.05.2019 11:40	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106537 Matrix: Solid Date Prep: 11.05.2019
MB Sample Id: 7689640-1-BLK LCS Sample Id: 7689640-1-BKS LCSD Sample Id: 7689640-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	10.4	104	10.5	105	80-120	1	20	mg/kg	11.05.2019 16:59	
Barium	<0.400	10.0	10.4	104	10.5	105	80-120	1	20	mg/kg	11.05.2019 16:59	
Cadmium	<0.200	10.0	10.3	103	10.3	103	80-120	0	20	mg/kg	11.05.2019 16:59	
Chromium	<0.400	10.0	10.2	102	9.99	100	80-120	2	20	mg/kg	11.05.2019 16:59	
Lead	<0.200	10.0	10.4	104	10.3	103	80-120	1	20	mg/kg	11.05.2019 16:59	
Selenium	<0.200	10.0	10.6	106	10.7	107	80-120	1	20	mg/kg	11.05.2019 16:59	
Silver	<0.200	5.00	5.20	104	5.14	103	80-120	1	20	mg/kg	11.05.2019 16:59	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106468 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-004 MS Sample Id: 641882-004 S MSD Sample Id: 641882-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	18.9	8.47	26.6	91	26.4	90	75-125	1	30	mg/kg	11.05.2019 11:49	
Barium	540	8.47	505	0	488	0	75-125	3	30	mg/kg	11.05.2019 11:49	X
Cadmium	<1.69	8.47	10.0	118	9.96	120	75-125	0	30	mg/kg	11.05.2019 11:49	
Chromium	12.9	8.47	21.2	98	21.2	100	75-125	0	30	mg/kg	11.05.2019 11:49	
Lead	17.9	8.47	26.4	100	25.6	92	75-125	3	30	mg/kg	11.05.2019 11:49	
Selenium	<1.69	8.47	10.3	122	10.2	122	75-125	1	30	mg/kg	11.05.2019 11:49	
Silver	<1.69	4.24	4.18	99	4.16	100	75-125	0	30	mg/kg	11.05.2019 11:49	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106537 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-023 MS Sample Id: 641882-023 S MSD Sample Id: 641882-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	26.0	8.47	35.1	107	33.6	91	75-125	4	30	mg/kg	11.05.2019 17:08	
Barium	764	8.47	756	0	735	0	75-125	3	30	mg/kg	11.05.2019 17:08	X
Cadmium	<1.69	8.47	9.49	112	9.50	114	75-125	0	30	mg/kg	11.05.2019 17:08	
Chromium	20.7	8.47	29.4	103	28.8	97	75-125	2	30	mg/kg	11.05.2019 17:08	
Lead	18.7	8.47	27.8	107	27.0	100	75-125	3	30	mg/kg	11.05.2019 17:08	
Selenium	<1.69	8.47	10.2	120	9.75	117	75-125	5	30	mg/kg	11.05.2019 17:08	
Silver	<1.69	4.24	3.73	88	3.56	85	75-125	5	30	mg/kg	11.05.2019 17:08	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106537 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-034 MS Sample Id: 641882-034 S MSD Sample Id: 641882-034 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	8.13	9.80	17.8	99	16.0	91	75-125	11	30	mg/kg	11.05.2019 18:04	
Barium	68.3	9.80	80.5	124	71.6	38	75-125	12	30	mg/kg	11.05.2019 18:04	X
Cadmium	<1.96	9.80	10.1	103	8.57	99	75-125	16	30	mg/kg	11.05.2019 18:04	
Chromium	14.4	9.80	25.0	108	21.6	84	75-125	15	30	mg/kg	11.05.2019 18:04	
Lead	15.9	9.80	26.4	107	23.4	87	75-125	12	30	mg/kg	11.05.2019 18:04	
Selenium	<1.96	9.80	10.1	103	9.19	107	75-125	9	30	mg/kg	11.05.2019 18:04	
Silver	<1.96	4.90	4.22	86	3.64	84	75-125	15	30	mg/kg	11.05.2019 18:04	

Analytical Method: **TCLP Mercury by SW 1311/7470A** Prep Method: SW7470P
Seq Number: 3107924 Matrix: Water Date Prep: 11.19.2019
MB Sample Id: 7690601-1-BLK LCS Sample Id: 7690601-1-BKS LCSD Sample Id: 7690601-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00190	95	0.00188	94	80-120	1	20	mg/L	11.19.2019 12:53	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

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Analytical Method: **TCLP Mercury by SW 1311/7470A** Prep Method: SW7470P
Seq Number: 3107924 Matrix: Ground Water Date Prep: 11.19.2019
Parent Sample Id: 643302-001 MS Sample Id: 643302-001 S MSD Sample Id: 643302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00176	88	0.00179	90	75-125	2	20	mg/L	11.19.2019 13:02	

Analytical Method: **TCLP Metal by SW 1311/6010C** Prep Method: SW3010A
Seq Number: 3107971 Matrix: Water Date Prep: 11.19.2019
MB Sample Id: 7690617-1-BLK LCS Sample Id: 7690617-1-BKS LCSD Sample Id: 7690617-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.0200	1.00	0.985	99	0.982	98	75-125	0	20	mg/L	11.19.2019 14:32	
Barium	<0.0100	1.00	0.975	98	0.972	97	75-125	0	20	mg/L	11.19.2019 14:32	
Cadmium	<0.0100	1.00	0.987	99	0.982	98	75-125	1	20	mg/L	11.19.2019 14:32	
Chromium	<0.0100	1.00	1.02	102	1.02	102	75-125	0	20	mg/L	11.19.2019 14:32	
Lead	<0.0150	1.00	1.03	103	1.02	102	75-125	1	20	mg/L	11.19.2019 14:32	
Selenium	<0.0300	1.00	0.978	98	0.975	98	75-125	0	20	mg/L	11.19.2019 14:32	
Silver	<0.0300	0.500	0.499	100	0.498	100	75-125	0	20	mg/L	11.19.2019 14:32	

Analytical Method: **TCLP Metal by SW 1311/6010C** Prep Method: SW3010A
Seq Number: 3107971 Matrix: Waste Water Date Prep: 11.19.2019
Parent Sample Id: 643160-001 MS Sample Id: 643160-001 S MSD Sample Id: 643160-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.0200	1.00	1.02	102	1.03	103	75-125	1	20	mg/L	11.19.2019 14:44	
Barium	0.0686	1.00	1.09	102	1.09	102	75-125	0	20	mg/L	11.19.2019 14:44	
Cadmium	<0.00243	1.00	1.05	105	1.06	106	75-125	1	20	mg/L	11.19.2019 14:44	
Chromium	<0.0100	1.00	1.06	106	1.05	105	75-125	1	20	mg/L	11.19.2019 14:44	
Lead	<0.0150	1.00	1.04	104	1.04	104	75-125	0	20	mg/L	11.19.2019 14:44	
Selenium	0.0688	1.00	1.15	108	1.14	107	75-125	1	20	mg/L	11.19.2019 14:44	
Silver	<0.0300	0.500	0.541	108	0.541	108	75-125	0	20	mg/L	11.19.2019 14:44	

Analytical Method: **FOC By ASTM D2974**
Seq Number: 3106488 Matrix: Solid
MB Sample Id: 3106488-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Fraction Organic Carbon	BRL	%	11.05.2019 15:45	

Analytical Method: **FOC By ASTM D2974**
Seq Number: 3106488 Matrix: Soil
Parent Sample Id: 641801-043 MD Sample Id: 641801-043 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Fraction Organic Carbon	2.50	2.30	8	25	%	11.05.2019 15:45	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Flash Point (CC) SW-846 1010**
Seq Number: 3106491 Matrix: Product
Parent Sample Id: 641579-001 MD Sample Id: 641579-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	138	140	1	25	Deg F	11.05.2019 10:30	

Analytical Method: **Flash Point (CC) SW-846 1010**
Seq Number: 3106491 Matrix: Soil
Parent Sample Id: 641812-003 MD Sample Id: 641812-003 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	>180	>180	0	25	Deg F	11.05.2019 14:05	

Analytical Method: **Paint Filter Liquids Test by SW 9095B**
Seq Number: 3106597 Matrix: Soil
Parent Sample Id: 641882-004 MD Sample Id: 641882-004 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	0		11.06.2019 13:30	

Analytical Method: **Paint Filter Liquids Test by SW 9095B**
Seq Number: 3106597 Matrix: Soil
Parent Sample Id: 642000-023 MD Sample Id: 642000-023 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	0		11.06.2019 13:30	

Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3106345 Matrix: Soil
Parent Sample Id: 641801-006 MD Sample Id: 641801-006 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.31	8.32	0	20	SU	11.04.2019 12:44	
Temperature	25.9	25.9	0	25	Deg C	11.04.2019 12:44	

Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3106345 Matrix: Soil
Parent Sample Id: 641882-012 MD Sample Id: 641882-012 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.30	8.31	0	20	SU	11.04.2019 12:44	
Temperature	25.1	25.0	0	25	Deg C	11.04.2019 12:44	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 641882

APS

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Analytical Method: **PCBs by SW 8082A** Prep Method: SW3550
Seq Number: 3106445 Matrix: Solid Date Prep: 11.04.2019
MB Sample Id: 7689522-1-BLK LCS Sample Id: 7689522-1-BKS LCSD Sample Id: 7689522-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0167	0.167	0.116	69	0.118	71	54-121	2	20	mg/kg	11.05.2019 11:02	
PCB-1260	<0.0167	0.167	0.159	95	0.161	96	41-126	1	20	mg/kg	11.05.2019 11:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	114		119		119		39-125	%	11.05.2019 11:02
Tetrachloro-m-xylene	51		58		59		37-124	%	11.05.2019 11:02

Analytical Method: **PCBs by SW 8082A** Prep Method: SW3550
Seq Number: 3106445 Matrix: Soil Date Prep: 11.04.2019
Parent Sample Id: 641882-004 MS Sample Id: 641882-004 S MSD Sample Id: 641882-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0333	0.167	0.157	94	0.154	92	54-121	2	20	mg/kg	11.05.2019 12:33	
PCB-1260	<0.0333	0.167	0.157	94	0.154	92	41-126	2	20	mg/kg	11.05.2019 12:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	196	**	123		39-125	%	11.05.2019 12:33
Tetrachloro-m-xylene	87		89		37-124	%	11.05.2019 12:33

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106513 Matrix: Solid Date Prep: 11.05.2019

MB Sample Id: 7689597-1-BLK LCS Sample Id: 7689597-1-BKS LCSD Sample Id: 7689597-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0296	89	0.0306	92	42-116	3	25	mg/kg	11.05.2019 16:33	
Acenaphthylene	<0.00167	0.0333	0.0286	86	0.0294	88	42-121	3	25	mg/kg	11.05.2019 16:33	
Anthracene	<0.00167	0.0333	0.0301	90	0.0304	91	44-120	1	25	mg/kg	11.05.2019 16:33	
Benzo(a)anthracene	<0.00167	0.0333	0.0311	93	0.0318	95	52-121	2	25	mg/kg	11.05.2019 16:33	
Benzo(a)pyrene	<0.00167	0.0333	0.0319	96	0.0319	96	50-128	0	25	mg/kg	11.05.2019 16:33	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0336	101	0.0339	102	49-137	1	25	mg/kg	11.05.2019 16:33	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0320	96	0.0335	101	47-132	5	25	mg/kg	11.05.2019 16:33	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0318	95	0.0341	102	48-133	7	25	mg/kg	11.05.2019 16:33	
Chrysene	<0.00167	0.0333	0.0308	92	0.0314	94	54-113	2	25	mg/kg	11.05.2019 16:33	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0330	99	0.0346	104	48-133	5	25	mg/kg	11.05.2019 16:33	
Fluoranthene	<0.00167	0.0333	0.0325	98	0.0328	98	54-128	1	25	mg/kg	11.05.2019 16:33	
Fluorene	<0.00167	0.0333	0.0299	90	0.0310	93	44-118	4	25	mg/kg	11.05.2019 16:33	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0329	99	0.0344	103	49-129	4	25	mg/kg	11.05.2019 16:33	
Naphthalene	<0.0167	0.0333	0.0284	85	0.0295	89	40-135	4	25	mg/kg	11.05.2019 16:33	
Phenanthrene	<0.00167	0.0333	0.0311	93	0.0321	96	44-119	3	25	mg/kg	11.05.2019 16:33	
Pyrene	<0.00167	0.0333	0.0311	93	0.0317	95	50-126	2	25	mg/kg	11.05.2019 16:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	114		115		114		31-130	%	11.05.2019 16:33
2-Fluorobiphenyl	118		115		117		51-133	%	11.05.2019 16:33
Terphenyl-D14	118		117		119		46-137	%	11.05.2019 16:33

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641882

APS

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Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106591 Matrix: Solid Date Prep: 11.05.2019

MB Sample Id: 7689639-1-BLK LCS Sample Id: 7689639-1-BKS LCSD Sample Id: 7689639-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0306	92	0.0307	92	42-116	0	25	mg/kg	11.05.2019 17:58	
Acenaphthylene	<0.00167	0.0333	0.0298	89	0.0299	90	42-121	0	25	mg/kg	11.05.2019 17:58	
Anthracene	<0.00167	0.0333	0.0309	93	0.0312	94	44-120	1	25	mg/kg	11.05.2019 17:58	
Benzo(a)anthracene	<0.00167	0.0333	0.0319	96	0.0327	98	52-121	2	25	mg/kg	11.05.2019 17:58	
Benzo(a)pyrene	<0.00167	0.0333	0.0327	98	0.0332	100	50-128	2	25	mg/kg	11.05.2019 17:58	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0345	104	0.0342	103	49-137	1	25	mg/kg	11.05.2019 17:58	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0327	98	0.0335	101	47-132	2	25	mg/kg	11.05.2019 17:58	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0321	96	0.0341	102	48-133	6	25	mg/kg	11.05.2019 17:58	
Chrysene	<0.00167	0.0333	0.0315	95	0.0321	96	54-113	2	25	mg/kg	11.05.2019 17:58	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0340	102	0.0349	105	48-133	3	25	mg/kg	11.05.2019 17:58	
Fluoranthene	<0.00167	0.0333	0.0323	97	0.0328	98	54-128	2	25	mg/kg	11.05.2019 17:58	
Fluorene	<0.00167	0.0333	0.0309	93	0.0314	94	44-118	2	25	mg/kg	11.05.2019 17:58	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0338	102	0.0347	104	49-129	3	25	mg/kg	11.05.2019 17:58	
Naphthalene	<0.0167	0.0333	0.0294	88	0.0293	88	40-135	0	25	mg/kg	11.05.2019 17:58	
Phenanthrene	<0.00167	0.0333	0.0317	95	0.0322	97	44-119	2	25	mg/kg	11.05.2019 17:58	
Pyrene	<0.00118	0.0333	0.0309	93	0.0318	95	50-126	3	25	mg/kg	11.05.2019 17:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	103		114		113		31-130	%	11.05.2019 17:58
2-Fluorobiphenyl	108		116		117		51-133	%	11.05.2019 17:58
Terphenyl-D14	112		115		119		46-137	%	11.05.2019 17:58

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641882

APS

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Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106513 Matrix: Soil Date Prep: 11.05.2019

Parent Sample Id: 641882-004 MS Sample Id: 641882-004 S MSD Sample Id: 641882-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	0.955	0.0333	0.904	0	2.96	6003	42-116	106	25	mg/kg	11.05.2019 19:38	XF
Acenaphthylene	10.9	0.0333	12.3	4204	38.3	82036	42-121	103	25	mg/kg	11.05.2019 19:38	XF
Anthracene	4.88	0.0333	5.95	3213	19.0	42275	44-120	105	25	mg/kg	11.05.2019 19:38	XF
Benzo(a)anthracene	7.25	0.0333	8.68	4294	24.8	52545	52-121	96	25	mg/kg	11.05.2019 19:38	XF
Benzo(a)pyrene	9.99	0.0333	12.0	6036	35.6	76677	50-128	99	25	mg/kg	11.05.2019 19:38	XF
Benzo(b)fluoranthene	10.0	0.0333	11.7	5105	33.2	69461	49-137	96	25	mg/kg	11.05.2019 19:38	XF
Benzo(g,h,i)perylene	8.37	0.0333	11.0	7898	30.6	66557	47-132	94	25	mg/kg	11.05.2019 19:38	XF
Benzo(k)fluoranthene	2.73	0.0333	3.49	2282	9.62	20629	48-133	94	25	mg/kg	11.05.2019 19:38	XF
Chrysene	7.71	0.0333	8.95	3724	25.0	51766	54-113	95	25	mg/kg	11.05.2019 19:38	XF
Dibenz(a,h)Anthracene	<0.666	0.0333	1.31	3934	3.40	10180	48-133	89	25	mg/kg	11.05.2019 19:38	XF
Fluoranthene	28.3	0.0333	34.6	18919	97.8	208084	54-128	95	25	mg/kg	11.05.2019 19:38	XF
Fluorene	5.82	0.0333	6.89	3213	24.0	54431	44-118	111	25	mg/kg	11.05.2019 19:38	XF
Indeno(1,2,3-c,d)Pyrene	6.18	0.0333	7.74	4685	21.5	45868	49-129	94	25	mg/kg	11.05.2019 19:38	XF
Naphthalene	21.0	0.0333	23.7	8108	75.7	163772	40-135	105	25	mg/kg	11.05.2019 19:38	XF
Phenanthrene	40.1	0.0333	49.1	27027	146	317066	44-119	99	25	mg/kg	11.05.2019 19:38	XF
Pyrene	33.8	0.0333	40.0	18619	114	240120	50-126	96	25	mg/kg	11.05.2019 19:38	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	118		98		31-130	%	11.05.2019 19:38
2-Fluorobiphenyl	104		100		51-133	%	11.05.2019 19:38
Terphenyl-D14	143	**	161	**	46-137	%	11.05.2019 19:38

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641882

APS

APS MPG Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550
Seq Number: 3106591 Matrix: Soil Date Prep: 11.05.2019
Parent Sample Id: 641882-023 MS Sample Id: 641882-023 S MSD Sample Id: 641882-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00166	0.0333	0.0264	79	0.0270	81	42-116	2	25	mg/kg	11.06.2019 10:35	
Acenaphthylene	0.00264	0.0333	0.0306	84	0.0361	100	42-121	16	25	mg/kg	11.06.2019 10:35	
Anthracene	0.00140	0.0333	0.0303	87	0.0337	97	44-120	11	25	mg/kg	11.06.2019 10:35	
Benzo(a)anthracene	0.00635	0.0333	0.0492	129	0.0511	134	52-121	4	25	mg/kg	11.06.2019 10:35	X
Benzo(a)pyrene	0.0133	0.0333	0.0689	167	0.0691	168	50-128	0	25	mg/kg	11.06.2019 10:35	X
Benzo(b)fluoranthene	0.0148	0.0333	0.0710	169	0.0738	177	49-137	4	25	mg/kg	11.06.2019 10:35	X
Benzo(g,h,i)perylene	0.0194	0.0333	0.0834	192	0.0823	189	47-132	1	25	mg/kg	11.06.2019 10:35	X
Benzo(k)fluoranthene	0.00424	0.0333	0.0415	112	0.0420	113	48-133	1	25	mg/kg	11.06.2019 10:35	
Chrysene	0.00828	0.0333	0.0542	138	0.0564	145	54-113	4	25	mg/kg	11.06.2019 10:35	X
Dibenz(a,h)Anthracene	<0.00166	0.0333	0.0358	108	0.0366	110	48-133	2	25	mg/kg	11.06.2019 10:35	
Fluoranthene	0.0251	0.0333	0.0973	217	0.109	252	54-128	11	25	mg/kg	11.06.2019 10:35	X
Fluorene	<0.00166	0.0333	0.0275	83	0.0297	89	44-118	8	25	mg/kg	11.06.2019 10:35	
Indeno(1,2,3-c,d)Pyrene	0.0125	0.0333	0.0650	158	0.0659	160	49-129	1	25	mg/kg	11.06.2019 10:35	X
Naphthalene	0.00171	0.0333	0.0311	88	0.0372	107	40-135	18	25	mg/kg	11.06.2019 10:35	
Phenanthrene	0.0149	0.0333	0.0647	150	0.0843	208	44-119	26	25	mg/kg	11.06.2019 10:35	XF
Pyrene	0.0293	0.0333	0.113	251	0.118	266	50-126	4	25	mg/kg	11.06.2019 10:35	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	99		91		31-130	%	11.06.2019 10:35
2-Fluorobiphenyl	98		98		51-133	%	11.06.2019 10:35
Terphenyl-D14	102		111		46-137	%	11.06.2019 10:35

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641882

APS

APS MPG Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106591 Matrix: Soil Date Prep: 11.05.2019

Parent Sample Id: 641882-034 MS Sample Id: 641882-034 S MSD Sample Id: 641882-034 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00166	0.0333	0.0303	91	0.0320	96	42-116	5	25	mg/kg	11.05.2019 18:48	
Acenaphthylene	<0.00166	0.0333	0.0295	89	0.0311	93	42-121	5	25	mg/kg	11.05.2019 18:48	
Anthracene	<0.00166	0.0333	0.0317	95	0.0324	97	44-120	2	25	mg/kg	11.05.2019 18:48	
Benzo(a)anthracene	<0.00166	0.0333	0.0328	98	0.0334	100	52-121	2	25	mg/kg	11.05.2019 18:48	
Benzo(a)pyrene	<0.00166	0.0333	0.0339	102	0.0345	104	50-128	2	25	mg/kg	11.05.2019 18:48	
Benzo(b)fluoranthene	<0.00166	0.0333	0.0355	107	0.0364	109	49-137	3	25	mg/kg	11.05.2019 18:48	
Benzo(g,h,i)perylene	<0.00166	0.0333	0.0338	102	0.0342	103	47-132	1	25	mg/kg	11.05.2019 18:48	
Benzo(k)fluoranthene	<0.00166	0.0333	0.0333	100	0.0335	101	48-133	1	25	mg/kg	11.05.2019 18:48	
Chrysene	<0.00166	0.0333	0.0323	97	0.0324	97	54-113	0	25	mg/kg	11.05.2019 18:48	
Dibenz(a,h)Anthracene	<0.00166	0.0333	0.0349	105	0.0356	107	48-133	2	25	mg/kg	11.05.2019 18:48	
Fluoranthene	<0.00166	0.0333	0.0334	100	0.0343	103	54-128	3	25	mg/kg	11.05.2019 18:48	
Fluorene	<0.00166	0.0333	0.0309	93	0.0325	98	44-118	5	25	mg/kg	11.05.2019 18:48	
Indeno(1,2,3-c,d)Pyrene	<0.00166	0.0333	0.0347	104	0.0353	106	49-129	2	25	mg/kg	11.05.2019 18:48	
Naphthalene	<0.0166	0.0333	0.0288	86	0.0306	92	40-135	6	25	mg/kg	11.05.2019 18:48	
Phenanthrene	<0.00166	0.0333	0.0325	98	0.0334	100	44-119	3	25	mg/kg	11.05.2019 18:48	
Pyrene	<0.00166	0.0333	0.0323	97	0.0330	99	50-126	2	25	mg/kg	11.05.2019 18:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	112		121		31-130	%	11.05.2019 18:48
2-Fluorobiphenyl	114		122		51-133	%	11.05.2019 18:48
Terphenyl-D14	121		123		46-137	%	11.05.2019 18:48

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641882

APS

APS MPG Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106377 Matrix: Solid Date Prep: 11.04.2019

MB Sample Id: 7689559-1-BLK LCS Sample Id: 7689559-1-BKS LCSD Sample Id: 7689559-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0495	99	0.0470	97	72-125	5	25	mg/kg	11.04.2019 10:43	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0478	96	0.0462	95	75-125	3	25	mg/kg	11.04.2019 10:43	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0503	101	0.0398	82	74-125	23	25	mg/kg	11.04.2019 10:43	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0490	98	0.0474	98	75-127	3	25	mg/kg	11.04.2019 10:43	
1,1-Dichloroethane	<0.00500	0.0500	0.0483	97	0.0460	95	72-125	5	25	mg/kg	11.04.2019 10:43	
1,1-Dichloroethene	<0.00500	0.0500	0.0500	100	0.0484	100	59-172	3	25	mg/kg	11.04.2019 10:43	
1,1-Dichloropropene	<0.00500	0.0500	0.0510	102	0.0485	100	75-125	5	25	mg/kg	11.04.2019 10:43	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0503	101	0.0414	85	75-137	19	25	mg/kg	11.04.2019 10:43	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0487	97	0.0394	81	75-125	21	25	mg/kg	11.04.2019 10:43	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0512	102	0.0423	87	75-135	19	25	mg/kg	11.04.2019 10:43	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0481	96	0.0395	81	75-125	20	25	mg/kg	11.04.2019 10:43	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0485	97	0.0390	80	59-125	22	25	mg/kg	11.04.2019 10:43	
1,2-Dibromoethane	<0.00500	0.0500	0.0489	98	0.0476	98	73-125	3	25	mg/kg	11.04.2019 10:43	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0494	99	0.0405	84	75-125	20	25	mg/kg	11.04.2019 10:43	
1,2-Dichloroethane	<0.00500	0.0500	0.0456	91	0.0431	89	68-127	6	25	mg/kg	11.04.2019 10:43	
1,2-Dichloropropane	<0.00500	0.0500	0.0481	96	0.0450	93	74-125	7	25	mg/kg	11.04.2019 10:43	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0523	105	0.0430	89	70-130	20	25	mg/kg	11.04.2019 10:43	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0488	98	0.0404	83	75-125	19	25	mg/kg	11.04.2019 10:43	
1,3-Dichloropropane	<0.00500	0.0500	0.0493	99	0.0484	100	75-125	2	25	mg/kg	11.04.2019 10:43	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0484	97	0.0401	83	75-125	19	25	mg/kg	11.04.2019 10:43	
2,2-Dichloropropane	<0.00500	0.0500	0.0491	98	0.0481	99	75-125	2	25	mg/kg	11.04.2019 10:43	
2-Butanone	<0.0200	0.250	0.201	80	0.191	79	75-125	5	25	mg/kg	11.04.2019 10:43	
2-Chlorotoluene	<0.00500	0.0500	0.0503	101	0.0410	85	73-125	20	25	mg/kg	11.04.2019 10:43	
2-Hexanone	<0.0500	0.250	0.220	88	0.210	86	75-125	5	25	mg/kg	11.04.2019 10:43	
4-Chlorotoluene	<0.00500	0.0500	0.0486	97	0.0402	83	74-125	19	25	mg/kg	11.04.2019 10:43	
4-Methyl-2-Pentanone	<0.0500	0.250	0.230	92	0.215	88	60-140	7	25	mg/kg	11.04.2019 10:43	
Acetone	<0.100	0.250	0.157	63	0.146	60	50-150	7	25	mg/kg	11.04.2019 10:43	
Benzene	<0.00100	0.0500	0.0475	95	0.0449	93	66-142	6	25	mg/kg	11.04.2019 10:43	
Bromobenzene	<0.00500	0.0500	0.0498	100	0.0409	84	75-125	20	25	mg/kg	11.04.2019 10:43	
Bromochloromethane	<0.00500	0.0500	0.0456	91	0.0448	92	60-140	2	25	mg/kg	11.04.2019 10:43	
Bromodichloromethane	<0.00500	0.0500	0.0484	97	0.0448	92	75-125	8	25	mg/kg	11.04.2019 10:43	
Bromoform	<0.00500	0.0500	0.0547	109	0.0497	102	75-125	10	25	mg/kg	11.04.2019 10:43	
Bromomethane	<0.00500	0.0500	0.0365	73	0.0383	79	60-140	5	25	mg/kg	11.04.2019 10:43	
Carbon Disulfide	<0.00500	0.0500	0.0581	116	0.0543	112	60-140	7	25	mg/kg	11.04.2019 10:43	
Carbon Tetrachloride	<0.00500	0.0500	0.0516	103	0.0492	101	62-125	5	25	mg/kg	11.04.2019 10:43	
Chlorobenzene	<0.00500	0.0500	0.0479	96	0.0469	97	60-133	2	25	mg/kg	11.04.2019 10:43	
Chloroethane	<0.0100	0.0500	0.0377	75	0.0377	78	60-140	0	25	mg/kg	11.04.2019 10:43	
Chloroform	<0.00500	0.0500	0.0457	91	0.0443	91	74-125	3	25	mg/kg	11.04.2019 10:43	
Chloromethane	<0.00500	0.0500	0.0424	85	0.0441	91	60-140	4	25	mg/kg	11.04.2019 10:43	
cis-1,2-Dichloroethene	<0.00500	0.0500	0.0459	92	0.0443	91	75-125	4	25	mg/kg	11.04.2019 10:43	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0503	101	0.0482	99	74-125	4	25	mg/kg	11.04.2019 10:43	
Dibromochloromethane	<0.00500	0.0500	0.0519	104	0.0483	100	73-125	7	25	mg/kg	11.04.2019 10:43	
Dibromomethane	<0.00500	0.0500	0.0470	94	0.0444	92	69-127	6	25	mg/kg	11.04.2019 10:43	
Dichlorodifluoromethane	<0.00500	0.0500	0.0625	125	0.0585	121	65-135	7	25	mg/kg	11.04.2019 10:43	
Ethylbenzene	<0.00100	0.0500	0.0482	96	0.0476	98	75-125	1	25	mg/kg	11.04.2019 10:43	
Hexachlorobutadiene	<0.00500	0.0500	0.0555	111	0.0455	94	75-125	20	25	mg/kg	11.04.2019 10:43	
Iodomethane (Methyl Iodide)	<0.0200	0.0500	0.0399	80	0.0390	80	75-125	2	25	mg/kg	11.04.2019 10:43	
Isopropylbenzene	<0.00500	0.0500	0.0505	101	0.0494	102	75-125	2	25	mg/kg	11.04.2019 10:43	
m,p-Xylenes	<0.00200	0.100	0.0973	97	0.0958	99	75-125	2	25	mg/kg	11.04.2019 10:43	
Methylene Chloride	<0.0200	0.0500	0.0481	96	0.0483	100	75-125	0	25	mg/kg	11.04.2019 10:43	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 641882

APS

APS MPG Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106377 Matrix: Solid Date Prep: 11.04.2019

MB Sample Id: 7689559-1-BLK LCS Sample Id: 7689559-1-BKS LCSD Sample Id: 7689559-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.00500	0.0500	0.0445	89	0.0444	92	60-140	0	25	mg/kg	11.04.2019 10:43	
Naphthalene	<0.0100	0.0500	0.0523	105	0.0428	88	70-130	20	25	mg/kg	11.04.2019 10:43	
n-Butylbenzene	<0.00500	0.0500	0.0507	101	0.0420	87	75-125	19	25	mg/kg	11.04.2019 10:43	
n-Propylbenzene	<0.00500	0.0500	0.0514	103	0.0423	87	75-125	19	25	mg/kg	11.04.2019 10:43	
o-Xylene	<0.00100	0.0500	0.0494	99	0.0485	100	75-125	2	25	mg/kg	11.04.2019 10:43	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0485	97	0.0402	83	75-125	19	25	mg/kg	11.04.2019 10:43	
Sec-Butylbenzene	<0.00500	0.0500	0.0507	101	0.0421	87	75-125	19	25	mg/kg	11.04.2019 10:43	
Styrene	<0.00500	0.0500	0.0483	97	0.0477	98	75-125	1	25	mg/kg	11.04.2019 10:43	
tert-Butylbenzene	<0.00500	0.0500	0.0557	111	0.0457	94	75-125	20	25	mg/kg	11.04.2019 10:43	
Tetrachloroethylene	<0.00500	0.0500	0.0520	104	0.0512	106	71-125	2	25	mg/kg	11.04.2019 10:43	
Toluene	<0.00500	0.0500	0.0472	94	0.0466	96	59-139	1	25	mg/kg	11.04.2019 10:43	
trans-1,2-dichloroethene	<0.00500	0.0500	0.0471	94	0.0457	94	75-125	3	25	mg/kg	11.04.2019 10:43	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0505	101	0.0496	102	66-125	2	25	mg/kg	11.04.2019 10:43	
Trichloroethene	<0.00500	0.0500	0.0441	88	0.0419	86	62-137	5	25	mg/kg	11.04.2019 10:43	
Trichlorofluoromethane	<0.00500	0.0500	0.0448	90	0.0440	91	67-125	2	25	mg/kg	11.04.2019 10:43	
Vinyl Acetate	<0.0100	0.250	0.202	81	0.192	79	60-140	5	25	mg/kg	11.04.2019 10:43	
Vinyl Chloride	<0.00500	0.0500	0.0442	88	0.0456	94	60-140	3	25	mg/kg	11.04.2019 10:43	
1,3-Butadiene	<0.00500	0.0500	0.0564	113	0.0583	120	70-130	3	25	mg/kg	11.04.2019 10:43	
Cyclohexane	<0.00500	0.0500	0.0490	98	0.0473	98	70-130	4	25	mg/kg	11.04.2019 10:43	
Dicyclopentadiene	<0.00500	0.0500	0.0454	91	0.0369	76	70-120	21	25	mg/kg	11.04.2019 10:43	
Methylcyclohexane	<0.0100	0.0500	0.0518	104	0.0490	101	65-135	6	25	mg/kg	11.04.2019 10:43	
n-Hexane	<0.0100	0.0500	0.0461	92	0.0448	92	72-125	3	25	mg/kg	11.04.2019 10:43	
4-Ethyltoluene	<0.00500	0.0500	0.0510	102	0.0419	86	70-130	20	25	mg/kg	11.04.2019 10:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	104		97		96		53-142	%	11.04.2019 10:43
1,2-Dichloroethane-D4	101		99		97		56-150	%	11.04.2019 10:43
Toluene-D8	103		100		102		70-130	%	11.04.2019 10:43
4-Bromofluorobenzene	96		99		84		68-152	%	11.04.2019 10:43

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 641882

APS

APS MPG Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106377 Matrix: Soil Date Prep: 11.04.2019

Parent Sample Id: 641882-004 MS Sample Id: 641882-004 S MSD Sample Id: 641882-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.250	2.50	2.32	93	2.22	91	72-125	4	25	mg/kg	11.04.2019 11:49	
1,1,1-Trichloroethane	<0.250	2.50	2.30	92	2.37	98	75-125	3	25	mg/kg	11.04.2019 11:49	
1,1,2,2-Tetrachloroethane	<0.250	2.50	2.28	91	2.10	86	74-125	8	25	mg/kg	11.04.2019 11:49	
1,1,2-Trichloroethane	<0.250	2.50	2.40	96	2.31	95	75-127	4	25	mg/kg	11.04.2019 11:49	
1,1-Dichloroethane	<0.250	2.50	2.36	94	2.38	98	72-125	1	25	mg/kg	11.04.2019 11:49	
1,1-Dichloroethene	<0.250	2.50	2.38	95	2.48	102	59-172	4	25	mg/kg	11.04.2019 11:49	
1,1-Dichloropropene	<0.250	2.50	2.48	99	2.53	104	75-125	2	25	mg/kg	11.04.2019 11:49	
1,2,3-Trichlorobenzene	<0.250	2.50	2.37	95	2.25	93	75-137	5	25	mg/kg	11.04.2019 11:49	
1,2,3-Trichloropropane	<0.250	2.50	2.30	92	2.04	84	75-125	12	25	mg/kg	11.04.2019 11:49	
1,2,4-Trichlorobenzene	<0.250	2.50	2.42	97	2.29	94	75-135	6	25	mg/kg	11.04.2019 11:49	
1,2,4-Trimethylbenzene	0.0194	2.50	2.38	94	2.20	90	75-125	8	25	mg/kg	11.04.2019 11:49	
1,2-Dibromo-3-Chloropropane	<0.250	2.50	2.03	81	1.81	74	59-125	11	25	mg/kg	11.04.2019 11:49	
1,2-Dibromoethane	<0.250	2.50	2.33	93	2.30	95	73-125	1	25	mg/kg	11.04.2019 11:49	
1,2-Dichlorobenzene	<0.250	2.50	2.38	95	2.19	90	75-125	8	25	mg/kg	11.04.2019 11:49	
1,2-Dichloroethane	<0.250	2.50	2.18	87	2.18	90	68-127	0	25	mg/kg	11.04.2019 11:49	
1,2-Dichloropropane	<0.250	2.50	2.36	94	2.29	94	74-125	3	25	mg/kg	11.04.2019 11:49	
1,3,5-Trimethylbenzene	<0.0144	2.50	2.57	103	2.40	99	70-130	7	25	mg/kg	11.04.2019 11:49	
1,3-Dichlorobenzene	<0.250	2.50	2.47	99	2.21	91	75-125	11	25	mg/kg	11.04.2019 11:49	
1,3-Dichloropropane	<0.250	2.50	2.45	98	2.39	98	75-125	2	25	mg/kg	11.04.2019 11:49	
1,4-Dichlorobenzene	<0.250	2.50	2.46	98	2.18	90	75-125	12	25	mg/kg	11.04.2019 11:49	
2,2-Dichloropropane	<0.250	2.50	2.33	93	2.41	99	75-125	3	25	mg/kg	11.04.2019 11:49	
2-Butanone	<1.00	12.5	9.05	72	9.29	77	75-125	3	25	mg/kg	11.04.2019 11:49	X
2-Chlorotoluene	<0.250	2.50	2.47	99	2.29	94	73-125	8	25	mg/kg	11.04.2019 11:49	
2-Hexanone	<2.50	12.5	10.1	81	10.0	83	75-125	1	25	mg/kg	11.04.2019 11:49	
4-Chlorotoluene	<0.250	2.50	2.47	99	2.25	93	74-125	9	25	mg/kg	11.04.2019 11:49	
4-Methyl-2-Pentanone	<2.50	12.5	10.3	82	10.2	84	60-140	1	25	mg/kg	11.04.2019 11:49	
Acetone	<5.00	12.5	6.60	53	6.98	58	50-150	6	25	mg/kg	11.04.2019 11:49	
Benzene	0.0248	2.50	2.38	94	2.37	97	66-142	0	25	mg/kg	11.04.2019 11:49	
Bromobenzene	<0.250	2.50	2.48	99	2.28	94	75-125	8	25	mg/kg	11.04.2019 11:49	
Bromochloromethane	<0.250	2.50	2.20	88	2.24	92	60-140	2	25	mg/kg	11.04.2019 11:49	
Bromodichloromethane	<0.250	2.50	2.20	88	2.12	87	75-125	4	25	mg/kg	11.04.2019 11:49	
Bromoform	<0.250	2.50	2.25	90	2.01	83	75-125	11	25	mg/kg	11.04.2019 11:49	
Bromomethane	<0.250	2.50	0.569	23	0.523	22	60-140	8	25	mg/kg	11.04.2019 11:49	X
Carbon Disulfide	<0.250	2.50	2.51	100	2.56	105	60-140	2	25	mg/kg	11.04.2019 11:49	
Carbon Tetrachloride	<0.250	2.50	2.34	94	2.34	96	62-125	0	25	mg/kg	11.04.2019 11:49	
Chlorobenzene	<0.250	2.50	2.42	97	2.33	96	60-133	4	25	mg/kg	11.04.2019 11:49	
Chloroethane	<0.500	2.50	0.689	28	0.821	34	60-140	17	25	mg/kg	11.04.2019 11:49	X
Chloroform	<0.250	2.50	2.22	89	2.25	93	74-125	1	25	mg/kg	11.04.2019 11:49	
Chloromethane	<0.250	2.50	2.39	96	2.33	96	60-140	3	25	mg/kg	11.04.2019 11:49	
cis-1,2-Dichloroethene	<0.250	2.50	2.27	91	2.28	94	75-125	0	25	mg/kg	11.04.2019 11:49	
cis-1,3-Dichloropropene	<0.250	2.50	2.48	99	2.39	98	74-125	4	25	mg/kg	11.04.2019 11:49	
Dibromochloromethane	<0.250	2.50	2.25	90	2.10	86	73-125	7	25	mg/kg	11.04.2019 11:49	
Dibromomethane	<0.250	2.50	2.24	90	2.22	91	69-127	1	25	mg/kg	11.04.2019 11:49	
Dichlorodifluoromethane	<0.250	2.50	2.98	119	3.02	124	65-135	1	25	mg/kg	11.04.2019 11:49	
Ethylbenzene	<0.0500	2.50	2.45	98	2.38	98	75-125	3	25	mg/kg	11.04.2019 11:49	
Hexachlorobutadiene	<0.250	2.50	2.58	103	2.41	99	75-125	7	25	mg/kg	11.04.2019 11:49	
Iodomethane (Methyl Iodide)	<1.00	2.50	1.92	77	1.94	80	75-125	1	25	mg/kg	11.04.2019 11:49	
Isopropylbenzene	<0.250	2.50	2.54	102	2.49	102	75-125	2	25	mg/kg	11.04.2019 11:49	
m,p-Xylenes	<0.0218	5.00	4.97	99	4.80	99	75-125	3	25	mg/kg	11.04.2019 11:49	
Methylene Chloride	<0.211	2.50	2.37	95	2.40	99	75-125	1	25	mg/kg	11.04.2019 11:49	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MPG Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106377 Matrix: Soil Date Prep: 11.04.2019

Parent Sample Id: 641882-004 MS Sample Id: 641882-004 S MSD Sample Id: 641882-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.250	2.50	2.14	86	2.20	91	60-140	3	25	mg/kg	11.04.2019 11:49	
Naphthalene	9.90	2.50	11.8	76	12.0	86	70-130	2	25	mg/kg	11.04.2019 11:49	
n-Butylbenzene	<0.250	2.50	2.50	100	2.29	94	75-125	9	25	mg/kg	11.04.2019 11:49	
n-Propylbenzene	<0.250	2.50	2.58	103	2.37	98	75-125	8	25	mg/kg	11.04.2019 11:49	
o-Xylene	<0.0493	2.50	2.48	99	2.41	99	75-125	3	25	mg/kg	11.04.2019 11:49	
p-Cymene (p-Isopropyltoluene)	<0.250	2.50	2.39	96	2.23	92	75-125	7	25	mg/kg	11.04.2019 11:49	
Sec-Butylbenzene	<0.250	2.50	2.49	100	2.33	96	75-125	7	25	mg/kg	11.04.2019 11:49	
Styrene	0.0218	2.50	2.50	99	2.42	99	75-125	3	25	mg/kg	11.04.2019 11:49	
tert-Butylbenzene	<0.250	2.50	2.72	109	2.55	105	75-125	6	25	mg/kg	11.04.2019 11:49	
Tetrachloroethylene	<0.250	2.50	2.63	105	2.56	105	71-125	3	25	mg/kg	11.04.2019 11:49	
Toluene	<0.0500	2.50	2.42	97	2.35	97	59-139	3	25	mg/kg	11.04.2019 11:49	
trans-1,2-dichloroethene	<0.250	2.50	2.31	92	2.37	98	75-125	3	25	mg/kg	11.04.2019 11:49	
trans-1,3-dichloropropene	<0.250	2.50	2.47	99	2.36	97	66-125	5	25	mg/kg	11.04.2019 11:49	
Trichloroethene	<0.250	2.50	2.20	88	2.18	90	62-137	1	25	mg/kg	11.04.2019 11:49	
Trichlorofluoromethane	<0.250	2.50	2.00	80	2.08	86	67-125	4	25	mg/kg	11.04.2019 11:49	
Vinyl Acetate	<0.500	12.5	9.54	76	9.43	78	60-140	1	25	mg/kg	11.04.2019 11:49	
Vinyl Chloride	<0.250	2.50	2.34	94	2.29	94	60-140	2	25	mg/kg	11.04.2019 11:49	
1,3-Butadiene	<0.250	2.50	2.94	118	2.89	119	70-130	2	25	mg/kg	11.04.2019 11:49	
Cyclohexane	<0.250	2.50	2.35	94	2.48	102	70-130	5	25	mg/kg	11.04.2019 11:49	
Dicyclopentadiene	<0.250	2.50	2.20	88	2.06	85	70-120	7	25	mg/kg	11.04.2019 11:49	
Methylcyclohexane	<0.500	2.50	2.50	100	2.57	106	65-135	3	25	mg/kg	11.04.2019 11:49	
n-Hexane	<0.500	2.50	2.32	93	2.34	96	72-125	1	25	mg/kg	11.04.2019 11:49	
4-Ethyltoluene	<0.250	2.50	2.57	103	2.34	96	70-130	9	25	mg/kg	11.04.2019 11:49	
Propene	<0.250	2.50	1.79	72	1.87	77	70-130	4	25	mg/kg	11.04.2019 11:49	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	94		97		53-142	%	11.04.2019 11:49
1,2-Dichloroethane-D4	97		98		56-150	%	11.04.2019 11:49
Toluene-D8	101		100		70-130	%	11.04.2019 11:49
4-Bromofluorobenzene	98		92		68-152	%	11.04.2019 11:49

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Chain of Custody

Work Order No: 641882

XENCO LABORATORIES

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Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II ☒ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine	☒
P.O. Number:	700735632	Rush:	48 hr
Sampler's Name:	A. Shuwate, M. Branche	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Temperature (°C):		Thermometer ID		
Received Intact:	Yes No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	Yes No N/A	Temp: -1.8	Corrected: -1.6	
Sample Custody Seals:	Yes No N/A			

Work Order Notes

IR ID:HOU-068 C/F:+0.2
Temp: 0.4 Corrected: 0.6

TAT starts the day recevied by the lab, if received by 4:30pm

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide						Sample Comments
D-B24-19.5-20.0	S	10.30.19	1555	19.5-20	1	X	X												
D-FD01-103019	S	10.30.19	1600	—	1	X	X												
D-B13-1.0-1.5	S	10.31.19	0750	1.0-1.5	3	X	X	X											
D-B13-2.5-3.0	S		0810	2.5-3.0	7	X	X	X	X	X	X	X	X						MS/MSD
D-B13-5.0-5.5	S		0910	5.0-5.5	1	X	X												
D-B13-7.5-8.0	S		0925	7.5-8.0	1	X	X												
D-B13-10.0-10.5	S		0935	10.0-10.5	1	X	X												
D-B13-15.0-15.5	S		0945	15.0-15.5	1	X	X												
D-FD01-103119	S		0950	—	1	X	X												
D-B13-19.5-20.0	S		0955	19.5-20.0	1	X	X												

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx		2 FedEx		11.4.19 9:30
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 641882

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Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RR ☐ Superfur ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine ☑	
P.O. Number:	700735632	Rush: 48 hr	
Sampler's Name:	A.Shwartz M.Branche	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes No	Wet Ice:	Yes No
Temperature (°C):		Thermometer ID		
Received Intact:	Yes No	IR ID:HOU-068 C/F:+0.2		
Cooler Custody Seals:	Yes No N/A	Temp: -1.8 Corrected: -1.6		
Sample Custody Seals:	Yes No N/A			

Work Order Notes

IR ID:HOU-068 C/F:+0.2
Temp: 0.4 Corrected: 0.6

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-TB01-103119	S	10-31-19	0800	—	1			X						Trip Blank
D-B12-1.0-1.5	S		1115	1.0-1.5	4	X	X	X	X	X	X	X	X	
D-B12-2.5-3.0	S		1125	2.5-3.0	3	X	X	X						
D-B12-5.0-5.5	S		1135	5.0-5.5	4	X	X	X	X	X	X	X	X	possible lamp black
D-FD02-103119	S		1140	—	4	X	X	X	X	X	X	X	X	↓
D-B12-7.5-8.0	S		1145	7.5-8.0	1	X	X							
D-B12-10.0-10.5	S		1150	10.0-10.5	1	X	X							
D-B12-15.0-15.5	S		1155	15.0-15.5	1	X	X							
D-B12-19.5-20	S	↓	1215	19.5-20.0	1	X	X							possible lamp black
D-B12-24.5-25.0	S		1350	24.5-25.0	1	X	X							

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx		2 FedEx		11-4-19 9:30
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 641882

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Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RR ☐ Superfur ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48hr	
Sampler's Name:	A.Shwartz, M.Branch	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: -1.8	Corrected: -1.6	
Sample Custody Seals:	Yes No (N/A)			

Work Order Notes

IR ID:HOU-068 C/F:+0.2
Temp: 0.4 Corrected: 0.6

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B23-2.5-3.0	S	10-31-19	1435	2.5-3.0	1	X	X							
D-FD03-103119	S		1445	—	1	X	X							
D-B23-5.0-5.5	S		1505	5.0-5.5	1	X	X							MS/MSD
D-B23-7.5-8.0	S		1530	7.5-8.0	1	X	X							
D-B23-9.5-10.0	S		1550	9.5-10.0	1	X	X							
D-B23-14.5-15.0	S		1610	14.5-15.0	1	X	X							
D-B23-19.5-20.0	S	↓	1630	19.5-20.0	1	X	X							
	S													

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx		2 FedEx		11.4.19 9:30
3			4		
5			6		

Chain of Custody

Work Order No: 641882

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 4 of 4

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48 Hours	
Sampler's Name:	Ilka D. Dinkelman	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068 C/F:+0.2		
Cooler Custody Seals:	(Yes) No N/A	Temp: -1.8 Corrected: -1.6		
Sample Custody Seals:	Yes No (N/A)			

Work Order Notes

IR ID:HOU-068 C/F:+0.2
Temp: 0.4 Corrected: 0.6

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	FOC (ASTM D4129-05)					Sample Comments
D-B25-10.0-10.5	S	10/31/19	9:30	10.0-10.5'	2	X	X							X					
D-B25-15.0-15.5	S	10/31/19	10:50	15.0-15.5'	1	X													
D-B25-20.0-20.5	S	10/31/19	11:25	20.0-20.5	2	X								X					
D-B25-25.0-25.5	S	10/31/19	11:45	25.0-25.5	1	X	X												MS/MSD
D-B25-30.0-30.5	S	10/31/19	13:20	30.0-30.5	2	X								X					
D-B25-40.0-40.5	S	10/31/19	16:20	40.0-40.5	(1)	X	X												1 JAR
D-FD04-103119	S	10/31/19	17:00	N/A	1	X	X												1 JAR
	S																		

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx		2 FedEx		11.4.19 930
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

FedEx
TRK# 0200 8125 9253 6299

MON - 04 NOV 10:30A
PRIORITY OVERNIGHT

HAL

77477
TX-US
IAH

XH SGRA

FID 3604368 01NOV19 AVWA 56AC3/2A3C/05A2

FedEx Tracking Number 8125 9253 6299

Form ID No. 0200

Phone

Dept./Floor/Suite/Room

State ZIP

Phone

Dept./Floor/Suite/Room

Hold Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

address.

State TX ZIP

99

4 Express Package Service • To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guid

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required — Package may be left without obtaining a signature for delivery.
Direct Signature — Someone at recipient's address may sign for delivery.
Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?
One box must be checked.

No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip Acct. No

Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Che

Total Packages Total Weight Credit Card Auth.

lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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644

SEAL

CUSTODY SEAL

DATE 11-1-19

SIGNATURE

FedEx TRK# 0200 8125 9253 6288

XH SGRA

MON - 04 NOV 10:30A
PRIORITY OVERNIGHT

77477
TX-US
IAH

FID 3604368 01NOV19 AWMA 56AC3/2A3C/85A2

FedEx Tracking Number 8125 9253 6288

Form ID No. 0200

Recipient's Copy

4 Express Package Service * To most locations.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

Packages up to 150 lbs.
For packages over 150 lbs., use FedEx Express Freight US A.

5 Packaging * Declared value limit $500.

- FedEx Envelope*
- FedEx Pak*
- FedEx Box
- FedEx Tube

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx

- Saturday Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.
- No Signature Required — Package may be left without obtaining a signature for delivery.
- Direct Signature — Someone at recipient's address may sign for delivery.
- Indirect Signature — If no one is available at address, someone at address may sign for residential deliveries.

Does this shipment contain dangerous goods?

One box must be checked.

- No
- Yes — As per attached Shipper's Declaration, not required.
- Yes — Shipper's Declaration not required.
- Dry Ice — Dry Ice, 9, UN 1845 — x ___ kg
- Cargo Aircraft O

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

7 Payment Bill to:

- Sender — Acct No. in Section 1 will be billed
- Recipient
- Third Party
- Credit Card

Enter FedEx Acct. No. or Credit Card No. below.

Total Packages ___ Total Weight ___ lbs.

Credit Card Auth.

Your liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Phone

Dept./Floor/Suite/Room

State ZIP

Hold Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

Hold Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 11.04.2019 09.30.00 AM

Work Order #: 641882

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	-1.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**Yes**	Extra container not on COC and added to the end
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: MDS

PH Device/Lot#:

Checklist completed by: Monica Shakhshir Date: 11.04.2019

Checklist reviewed by: Ruriko Konuma Date: 11.04.2019

Analytical Report 642000

for

APS

Project Manager: Judy Heywood

APS MGP Douglas, AZ

D3118600.A.CS.EV.DG.05-1B

08-NOV-19

Collected By: Client

4147 Greenbriar Dr.
Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

08-NOV-19

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: XENCO Report No(s): **642000**
APS MGP Douglas, AZ
Project Address:

Judy Heywood:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 642000. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 642000 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ruriko Konuma
Project Manager

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106630 Metals, RCRA List, by SW 6020
Lab Sample ID 642000-015 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Arsenic recovered above QC limits in the Matrix Spike. Barium, Chromium, Lead recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642000-011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021, -023, -024, -025, -026, -027, -028, -029, -030.
The Laboratory Control Sample for Arsenic, Chromium, Barium, Lead is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106671 PAHs by SW846 8270D SIM
Lab Sample ID 642000-057 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-c,d)Pyrene recovered below QC limits in the Matrix Spike. Benzo(g,h,i)perylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642000-057, -058.
The Laboratory Control Sample for Dibenz(a,h)anthracene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Indeno(1,2,3-c,d)Pyrene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106705 Metals, RCRA List, by SW 6020
Lab Sample ID 642000-048 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Barium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Arsenic recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642000-031, -032, -035, -036, -037, -038, -039, -040, -041, -042, -043, -044, -045, -046, -047, -048, -049, -050, -051, -052.
The Laboratory Control Sample for Arsenic, Barium is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106710 PAHs by 8270D SIM
Fluoranthene, Phenanthrene, Pyrene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 642000-043, -044, -045, -046, -047, -048, -049, -050, -051, -052, -053, -054, -055

Lab Sample ID 642000-048 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Fluoranthene, Phenanthrene, Pyrene recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642000-043, -044, -045, -046, -047, -048, -049, -050, -051, -052, -053, -054, -055.
The Laboratory Control Sample for Pyrene, Fluoranthene, Phenanthrene is within laboratory Control Limits, therefore the data was accepted.

Sample 642000-048 was run at dilution due to the physical characteristics of the sample (dark and viscous).

Batch: LBA-3106739 PAHs by 8270D SIM
Lab Sample ID 642000-015 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzo(a)anthracene , Benzo(a)pyrene , Benzo(b)fluoranthene , Benzo(g,h,i)perylene , Chrysene, Fluoranthene, Indeno(1,2,3-c,d)Pyrene , Phenanthrene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642000-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.
The Laboratory Control Sample for Chrysene, Pyrene, Benzo(a)pyrene , Benzo(b)fluoranthene , Fluoranthene, Benzo(a)anthracene , Indeno(1,2,3-c,d)Pyrene , Benzo(g,h,i)perylene , Phenanthrene is within laboratory Control Limits, therefore the data was accepted.

Acenaphthylene, Anthracene, Benzo(a)anthracene , Benzo(a)pyrene , Benzo(b)fluoranthene , Benzo(g,h,i)perylene , Benzo(k)fluoranthene , Chrysene, Fluoranthene, Indeno(1,2,3-c,d)Pyrene , Phenanthrene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 642000-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020

Samples in work order 642000 were run at dilution due to the physical characteristics of the sample (dark and very viscous).

Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Sample Cross Reference 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-B30-5.0-5.5	S	11-01-19 08:50	5.0 - 5.5	642000-001
D-FD01-110119	S	11-01-19 08:55		642000-002
D-B30-10.0-10.5	S	11-01-19 09:10	10.0 - 10.5	642000-003
D-B30-15.0-15.5	S	11-01-19 09:15	15.0 - 15.5	642000-004
D-B30-19.5-20.0	S	11-01-19 09:30	19.5 - 20.0	642000-005
D-B21-2.5-3.0	S	11-01-19 10:40	2.5 - 3.0	642000-006
D-FD02-110119	S	11-01-19 10:45		642000-007
D-B21-5.0-5.5	S	11-01-19 10:55	5.0 - 5.5	642000-008
D-B21-7.5-8.0	S	11-01-19 11:15	7.5 - 8.0	642000-009
D-B21-10.0-10.5	S	11-01-19 11:25	10.0 - 10.5	642000-010
D-B21-15.0-15.5	S	11-01-19 11:35	15.0 - 15.5	642000-011
D-B21-19.5-20.0	S	11-01-19 11:45	19.5 - 20.0	642000-012
D-B21-24.5-25.0	S	11-01-19 13:05	24.5 - 25.0	642000-013
D-B15-1.0-1.5	S	11-01-19 13:55	1.0 - 1.5	642000-014
D-B15-2.5-3.0	S	11-01-19 14:10	2.5 - 3.0	642000-015
D-B15-5.0-5.5	S	11-01-19 14:25	5.0 - 5.5	642000-016
D-FD03-110119	S	11-01-19 14:35		642000-017
D-B15-7.5-8.0	S	11-01-19 14:45	7.5 - 8.0	642000-018
D-B15-10.0-10.5	S	11-01-19 14:50	10.0 - 10.5	642000-019
D-FD04-110119	S	11-01-19 14:55		642000-020
D-B15-14.5-15.0	S	11-01-19 15:00	14.5 - 15.0	642000-021
D-TB01-110119	S	11-01-19 08:00		642000-022
D-B19-2.5-3.0	S	11-01-19 15:40	2.5 - 3.0	642000-023
D-B19-5.0-5.5	S	11-01-19 15:55	5.0 - 5.5	642000-024
D-B19-7.5-8.0	S	11-01-19 16:05	7.5 - 8.0	642000-025
D-B19-10.0-10.5	S	11-02-19 08:00	10.0 - 10.5	642000-026
D-B19-15.0-15.5	S	11-02-19 08:10	15.0 - 15.5	642000-027
D-B19-19.5-20.0	S	11-02-19 08:25	19.5 - 20.0	642000-028
D-B20-7.5-8.0	S	11-02-19 09:25	7.5 - 8.0	642000-029
D-B20-9.5-10.0	S	11-02-19 09:30	9.5 - 10.0	642000-030
D-B20-14.5-15.0	S	11-02-19 09:45	14.5 - 15.0	642000-031
D-B20-19.5-20.0	S	11-02-19 09:55	19.5 - 20.0	642000-032
D-TAR-01	S	11-02-19 08:00		642000-033
D-B26-40.0-40.5	S	11-02-19 14:30	40.0 - 40.5	642000-034
D-B27-2.5-3.0	S	11-03-19 10:00	2.5 - 3.0	642000-035
D-B27-5.0-5.5	S	11-03-19 10:10	5.0 - 5.5	642000-036
D-FD01-110319	S	11-03-19 10:05		642000-037
D-B27-7.5-8.0	S	11-03-19 15:15	7.5 - 8.0	642000-038
D-B27-10.0-10.5	S	11-03-19 15:35	10.0 - 10.5	642000-039
D-B27-15.0-15.5	S	11-03-19 15:55	15.0 - 15.5	642000-040
D-B27-20.0-20.5	S	11-03-19 16:20	20.0 - 20.5	642000-041
D-B27-25.0-25.5	S	11-03-19 16:30	25.0 - 25.5	642000-042
D-FD02-110319	S	11-03-19 16:35		642000-043

D-B26-2.5-3.0	S	11-01-19 14:15	2.5 - 3.0	642000-044
D-FD05-110119	S	11-01-19 14:20		642000-045
D-B26-5.0-5.5	S	11-01-19 14:30	5.0 - 5.5	642000-046
D-B26-7.5-8.0	S	11-02-19 09:50	7.5 - 8.0	642000-047
D-B26-10.0-10.5	S	11-02-19 10:15	10.0 - 10.5	642000-048
D-B26-15.0-15.5	S	11-02-19 10:35	15.0 - 15.5	642000-049
D-B26-20.0-20.5	S	11-02-19 10:50	20.0 - 20.5	642000-050
D-B26-25.0-25.5	S	11-02-19 11:15	25.0 - 25.5	642000-051
D-FD01-110219	S	11-02-19 09:55		642000-052
D-B26-30.0-30.5	S	11-02-19 13:25	30.0 - 30.5	642000-053
D-B27-30.0-30.5	S	11-04-19 09:50	30.0 - 30.5	642000-054
D-B27-40.0-40.5	S	11-04-19 11:05	40.0 - 40.5	642000-055
D-TB01-102919	S	10-29-19 00:00		642000-056
D-EB01-102919	W	10-29-19 10:20		642000-057
D-EB01-110219	W	11-02-19 15:50		642000-058

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B30-5.0-5.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-001 Date Collected: 11.01.19 08.50 Sample Depth: 5.0 - 5.5

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.06.19 11.00 Basis: Wet Weight
Seq Number: 3106614 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0565	mg/kg	11.06.19 12.22	U	1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	11.06.19 11.02	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight
Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.6**	1.85	mg/kg	11.06.19 17.57		10
Barium	7440-39-3	**133**	3.70	mg/kg	11.06.19 17.57		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.06.19 17.57	U	10
Chromium	7440-47-3	**10.2**	3.70	mg/kg	11.06.19 17.57		10
Lead	7439-92-1	**26.8**	1.85	mg/kg	11.06.19 17.57		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.06.19 17.57	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.06.19 17.57	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B30-5.0-5.5** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-001 Date Collected: 11.01.19 08.50 Sample Depth: 5.0 - 5.5

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.06.19 10.56		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.19 13.30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**7.91**		SU	11.06.19 11.26		1
Temperature	TEMP	**25.3**		Deg C	11.06.19 11.26	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B30-5.0-5.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-001	Date Collected:	11.01.19 08.50	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.09	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00833	mg/kg	11.07.19 11.40	U	5
Acenaphthylene	208-96-8	**0.0154**	0.00833	mg/kg	11.07.19 11.40		5
Anthracene	120-12-7	**0.00931**	0.00833	mg/kg	11.07.19 11.40		5
Benzo(a)anthracene	56-55-3	**0.0376**	0.00833	mg/kg	11.07.19 11.40		5
Benzo(a)pyrene	50-32-8	**0.0672**	0.00833	mg/kg	11.07.19 11.40		5
Benzo(b)fluoranthene	205-99-2	**0.0795**	0.00833	mg/kg	11.07.19 11.40		5
Benzo(g,h,i)perylene	191-24-2	**0.0744**	0.00833	mg/kg	11.07.19 11.40		5
Benzo(k)fluoranthene	207-08-9	**0.0232**	0.00833	mg/kg	11.07.19 11.40		5
Chrysene	218-01-9	**0.0484**	0.00833	mg/kg	11.07.19 11.40		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00833	mg/kg	11.07.19 11.40	U	5
Fluoranthene	206-44-0	**0.140**	0.00833	mg/kg	11.07.19 11.40		5
Fluorene	86-73-7	BRL	0.00833	mg/kg	11.07.19 11.40	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0536**	0.00833	mg/kg	11.07.19 11.40		5
Naphthalene	91-20-3	BRL	0.0833	mg/kg	11.07.19 11.40	U	5
Phenanthrene	85-01-8	**0.100**	0.00833	mg/kg	11.07.19 11.40		5
Pyrene	129-00-0	**0.172**	0.00833	mg/kg	11.07.19 11.40		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	85	%	31-130	11.07.19 11.40	
2-Fluorobiphenyl	96	%	51-133	11.07.19 11.40	
Terphenyl-D14	112	%	46-137	11.07.19 11.40	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B30-5.0-5.5**
Lab Sample Id: 642000-001
Matrix: Soil
Date Collected: 11.01.19 08.50
Date Received: 11.05.19 10.00
Sample Depth: 5.0 - 5.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,1-Dichloroethane	75-34-3	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,1-Dichloroethene	75-35-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,1-Dichloropropene	563-58-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2-Dibromoethane	106-93-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2-Dichloroethane	107-06-2	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,2-Dichloropropane	78-87-5	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,3-Dichloropropane	142-28-9	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.213	mg/kg	11.05.19 16.30	U	50
2,2-Dichloropropane	594-20-7	BRL	0.213	mg/kg	11.05.19 16.30	U	50
2-Butanone	78-93-3	BRL	0.853	mg/kg	11.05.19 16.30	U	50
2-Chlorotoluene	95-49-8	BRL	0.213	mg/kg	11.05.19 16.30	U	50
2-Hexanone	591-78-6	BRL	2.13	mg/kg	11.05.19 16.30	U	50
4-Chlorotoluene	106-43-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.13	mg/kg	11.05.19 16.30	U	50
Acetone	67-64-1	BRL	4.27	mg/kg	11.05.19 16.30	U	50
Benzene	71-43-2	BRL	0.0427	mg/kg	11.05.19 16.30	U	50
Bromobenzene	108-86-1	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Bromochloromethane	74-97-5	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Bromodichloromethane	75-27-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Bromoform	75-25-2	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Bromomethane	74-83-9	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Carbon Disulfide	75-15-0	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Carbon Tetrachloride	56-23-5	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Chlorobenzene	108-90-7	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Chloroethane	75-00-3	BRL	0.427	mg/kg	11.05.19 16.30	U	50
Chloroform	67-66-3	BRL	0.213	mg/kg	11.05.19 16.30	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B30-5.0-5.5**
Lab Sample Id: 642000-001
Matrix: Soil
Date Collected: 11.01.19 08.50
Date Received: 11.05.19 10.00
Sample Depth: 5.0 - 5.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.213	mg/kg	11.05.19 16.30	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.213	mg/kg	11.05.19 16.30	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Dibromochloromethane	124-48-1	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Dibromomethane	74-95-3	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Ethylbenzene	100-41-4	BRL	0.0427	mg/kg	11.05.19 16.30	U	50
Hexachlorobutadiene	87-68-3	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.853	mg/kg	11.05.19 16.30	U	50
Isopropylbenzene	98-82-8	BRL	0.213	mg/kg	11.05.19 16.30	U	50
m,p-Xylenes	179601-23-1	BRL	0.0853	mg/kg	11.05.19 16.30	U	50
Methylene Chloride	75-09-2	BRL	0.853	mg/kg	11.05.19 16.30	U	50
MTBE	1634-04-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Naphthalene	91-20-3	BRL	0.427	mg/kg	11.05.19 16.30	U	50
n-Butylbenzene	104-51-8	BRL	0.213	mg/kg	11.05.19 16.30	U	50
n-Propylbenzene	103-65-1	BRL	0.213	mg/kg	11.05.19 16.30	U	50
o-Xylene	95-47-6	BRL	0.0427	mg/kg	11.05.19 16.30	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Sec-Butylbenzene	135-98-8	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Styrene	100-42-5	BRL	0.213	mg/kg	11.05.19 16.30	U	50
tert-Butylbenzene	98-06-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Tetrachloroethylene	127-18-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Toluene	108-88-3	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Total Xylenes	1330-20-7	BRL	0.0427	mg/kg	11.05.19 16.30	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.213	mg/kg	11.05.19 16.30	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Trichloroethene	79-01-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Trichlorofluoromethane	75-69-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Vinyl Acetate	108-05-4	BRL	0.427	mg/kg	11.05.19 16.30	U	50
Vinyl Chloride	75-01-4	BRL	0.213	mg/kg	11.05.19 16.30	U	50
1,3-Butadiene	106-99-0	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Cyclohexane	110-82-7	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Dicyclopentadiene	77-73-6	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Methylcyclohexane	108-87-2	BRL	0.427	mg/kg	11.05.19 16.30	U	50
n-Hexane	110-54-3	BRL	0.427	mg/kg	11.05.19 16.30	U	50
4-Ethyltoluene	622-96-8	BRL	0.213	mg/kg	11.05.19 16.30	U	50
Propene	115-07-1	BRL	0.213	mg/kg	11.05.19 16.30	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B30-5.0-5.5**
Lab Sample Id: 642000-001

Matrix: Soil
Date Collected: 11.01.19 08.50

Date Received: 11.05.19 10.00
Sample Depth: 5.0 - 5.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	86	%	53-142	11.05.19 16.30	
1,2-Dichloroethane-D4	98	%	56-150	11.05.19 16.30	
Toluene-D8	101	%	70-130	11.05.19 16.30	
4-Bromofluorobenzene	97	%	68-152	11.05.19 16.30	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110119** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-002 Date Collected: 11.01.19 08.55

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.06.19 11.00 Basis: Wet Weight
Seq Number: 3106614 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0571	mg/kg	11.06.19 12.27	U	1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0208**	0.0192	mg/kg	11.06.19 11.08		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight
Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.5**	1.89	mg/kg	11.06.19 18.06		10
Barium	7440-39-3	**162**	3.77	mg/kg	11.06.19 18.06		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.06.19 18.06	U	10
Chromium	7440-47-3	**11.5**	3.77	mg/kg	11.06.19 18.06		10
Lead	7439-92-1	**52.3**	1.89	mg/kg	11.06.19 18.06		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.06.19 18.06	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.06.19 18.06	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110119** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-002 Date Collected: 11.01.19 08.55

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.06.19 11.15		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.19 13.30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**7.76**		SU	11.06.19 11.26		1
Temperature	TEMP	**25.3**		Deg C	11.06.19 11.26	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110119**
Lab Sample Id: 642000-002

Matrix: Soil
Date Collected: 11.01.19 08.55

Date Received:11.05.19 10.00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106739

Date Prep: 11.06.19 12.12

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00832	mg/kg	11.07.19 15.34	U	5
Acenaphthylene	208-96-8	**0.0125**	0.00832	mg/kg	11.07.19 15.34		5
Anthracene	120-12-7	**0.0115**	0.00832	mg/kg	11.07.19 15.34		5
Benzo(a)anthracene	56-55-3	**0.0439**	0.00832	mg/kg	11.07.19 15.34		5
Benzo(a)pyrene	50-32-8	**0.0719**	0.00832	mg/kg	11.07.19 15.34		5
Benzo(b)fluoranthene	205-99-2	**0.116**	0.00832	mg/kg	11.07.19 15.34		5
Benzo(g,h,i)perylene	191-24-2	**0.0533**	0.00832	mg/kg	11.07.19 15.34		5
Benzo(k)fluoranthene	207-08-9	**0.0307**	0.00832	mg/kg	11.07.19 15.34		5
Chrysene	218-01-9	**0.0631**	0.00832	mg/kg	11.07.19 15.34		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00832	mg/kg	11.07.19 15.34	U	5
Fluoranthene	206-44-0	**0.119**	0.00832	mg/kg	11.07.19 15.34		5
Fluorene	86-73-7	BRL	0.00832	mg/kg	11.07.19 15.34	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0441**	0.00832	mg/kg	11.07.19 15.34		5
Naphthalene	91-20-3	BRL	0.0832	mg/kg	11.07.19 15.34	U	5
Phenanthrene	85-01-8	**0.0498**	0.00832	mg/kg	11.07.19 15.34		5
Pyrene	129-00-0	**0.133**	0.00832	mg/kg	11.07.19 15.34		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	95	%	31-130	11.07.19 15.34	
2-Fluorobiphenyl	105	%	51-133	11.07.19 15.34	
Terphenyl-D14	112	%	46-137	11.07.19 15.34	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110119**
Lab Sample Id: 642000-002
Matrix: Soil
Date Collected: 11.01.19 08.55
Date Received:11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,1-Dichloroethane	75-34-3	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,1-Dichloroethene	75-35-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,1-Dichloropropene	563-58-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2-Dibromoethane	106-93-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2-Dichloroethane	107-06-2	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,2-Dichloropropane	78-87-5	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,3-Dichloropropane	142-28-9	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.266	mg/kg	11.05.19 16.51	U	50
2,2-Dichloropropane	594-20-7	BRL	0.266	mg/kg	11.05.19 16.51	U	50
2-Butanone	78-93-3	BRL	1.06	mg/kg	11.05.19 16.51	U	50
2-Chlorotoluene	95-49-8	BRL	0.266	mg/kg	11.05.19 16.51	U	50
2-Hexanone	591-78-6	BRL	2.66	mg/kg	11.05.19 16.51	U	50
4-Chlorotoluene	106-43-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.66	mg/kg	11.05.19 16.51	U	50
Acetone	67-64-1	BRL	5.32	mg/kg	11.05.19 16.51	U	50
Benzene	71-43-2	BRL	0.0532	mg/kg	11.05.19 16.51	U	50
Bromobenzene	108-86-1	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Bromochloromethane	74-97-5	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Bromodichloromethane	75-27-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Bromoform	75-25-2	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Bromomethane	74-83-9	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Carbon Disulfide	75-15-0	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Carbon Tetrachloride	56-23-5	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Chlorobenzene	108-90-7	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Chloroethane	75-00-3	BRL	0.532	mg/kg	11.05.19 16.51	U	50
Chloroform	67-66-3	BRL	0.266	mg/kg	11.05.19 16.51	U	50

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APS MGP Douglas, AZ

Sample Id: **D-FD01-110119**
Lab Sample Id: 642000-002
Matrix: Soil
Date Collected: 11.01.19 08.55
Date Received:11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.266	mg/kg	11.05.19 16.51	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.266	mg/kg	11.05.19 16.51	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Dibromochloromethane	124-48-1	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Dibromomethane	74-95-3	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Ethylbenzene	100-41-4	BRL	0.0532	mg/kg	11.05.19 16.51	U	50
Hexachlorobutadiene	87-68-3	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.06	mg/kg	11.05.19 16.51	U	50
Isopropylbenzene	98-82-8	BRL	0.266	mg/kg	11.05.19 16.51	U	50
m,p-Xylenes	179601-23-1	BRL	0.106	mg/kg	11.05.19 16.51	U	50
Methylene Chloride	75-09-2	BRL	1.06	mg/kg	11.05.19 16.51	U	50
MTBE	1634-04-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Naphthalene	91-20-3	BRL	0.532	mg/kg	11.05.19 16.51	U	50
n-Butylbenzene	104-51-8	BRL	0.266	mg/kg	11.05.19 16.51	U	50
n-Propylbenzene	103-65-1	BRL	0.266	mg/kg	11.05.19 16.51	U	50
o-Xylene	95-47-6	BRL	0.0532	mg/kg	11.05.19 16.51	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Sec-Butylbenzene	135-98-8	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Styrene	100-42-5	BRL	0.266	mg/kg	11.05.19 16.51	U	50
tert-Butylbenzene	98-06-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Tetrachloroethylene	127-18-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Toluene	108-88-3	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Total Xylenes	1330-20-7	BRL	0.0532	mg/kg	11.05.19 16.51	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.266	mg/kg	11.05.19 16.51	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Trichloroethene	79-01-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Trichlorofluoromethane	75-69-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Vinyl Acetate	108-05-4	BRL	0.532	mg/kg	11.05.19 16.51	U	50
Vinyl Chloride	75-01-4	BRL	0.266	mg/kg	11.05.19 16.51	U	50
1,3-Butadiene	106-99-0	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Cyclohexane	110-82-7	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Dicyclopentadiene	77-73-6	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Methylcyclohexane	108-87-2	BRL	0.532	mg/kg	11.05.19 16.51	U	50
n-Hexane	110-54-3	BRL	0.532	mg/kg	11.05.19 16.51	U	50
4-Ethyltoluene	622-96-8	BRL	0.266	mg/kg	11.05.19 16.51	U	50
Propene	115-07-1	BRL	0.266	mg/kg	11.05.19 16.51	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110119**
Lab Sample Id: 642000-002

Matrix: Soil
Date Collected: 11.01.19 08.55

Date Received:11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	85	%	53-142	11.05.19 16.51	
1,2-Dichloroethane-D4	98	%	56-150	11.05.19 16.51	
Toluene-D8	102	%	70-130	11.05.19 16.51	
4-Bromofluorobenzene	97	%	68-152	11.05.19 16.51	

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Sample Id: **D-B30-10.0-10.5** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-003 Date Collected: 11.01.19 09.10 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight

Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0250**	0.0200	mg/kg	11.06.19 11.10		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight

Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.78**	1.85	mg/kg	11.06.19 18.09		10
Barium	7440-39-3	**112**	3.70	mg/kg	11.06.19 18.09		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.06.19 18.09	U	10
Chromium	7440-47-3	**8.93**	3.70	mg/kg	11.06.19 18.09		10
Lead	7439-92-1	**36.8**	1.85	mg/kg	11.06.19 18.09		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.06.19 18.09	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.06.19 18.09	U	10

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Sample Id:	**D-B30-10.0-10.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-003	Date Collected:	11.01.19 09.10	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.15	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00835	mg/kg	11.07.19 19.12	U	5
Acenaphthylene	208-96-8	**0.0336**	0.00835	mg/kg	11.07.19 19.12		5
Anthracene	120-12-7	**0.0219**	0.00835	mg/kg	11.07.19 19.12		5
Benzo(a)anthracene	56-55-3	**0.0705**	0.00835	mg/kg	11.07.19 19.12		5
Benzo(a)pyrene	50-32-8	**0.115**	0.00835	mg/kg	11.07.19 19.12		5
Benzo(b)fluoranthene	205-99-2	**0.147**	0.00835	mg/kg	11.07.19 19.12		5
Benzo(g,h,i)perylene	191-24-2	**0.105**	0.00835	mg/kg	11.07.19 19.12		5
Benzo(k)fluoranthene	207-08-9	**0.0405**	0.00835	mg/kg	11.07.19 19.12		5
Chrysene	218-01-9	**0.0867**	0.00835	mg/kg	11.07.19 19.12		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00835	mg/kg	11.07.19 19.12	U	5
Fluoranthene	206-44-0	**0.226**	0.00835	mg/kg	11.07.19 19.12		5
Fluorene	86-73-7	**0.0105**	0.00835	mg/kg	11.07.19 19.12		5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0795**	0.00835	mg/kg	11.07.19 19.12		5
Naphthalene	91-20-3	BRL	0.0835	mg/kg	11.07.19 19.12	U	5
Phenanthrene	85-01-8	**0.156**	0.00835	mg/kg	11.07.19 19.12		5
Pyrene	129-00-0	**0.266**	0.00835	mg/kg	11.07.19 19.12		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	79	%	31-130	11.07.19 19.12	
2-Fluorobiphenyl	93	%	51-133	11.07.19 19.12	
Terphenyl-D14	119	%	46-137	11.07.19 19.12	

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APS MGP Douglas, AZ

Sample Id: **D-B30-15.0-15.5** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-004 Date Collected: 11.01.19 09.15 Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight

Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.06.19 11.12	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight

Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.4**	1.69	mg/kg	11.06.19 18.12		10
Barium	7440-39-3	**130**	3.39	mg/kg	11.06.19 18.12		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.06.19 18.12	U	10
Chromium	7440-47-3	**14.0**	3.39	mg/kg	11.06.19 18.12		10
Lead	7439-92-1	**14.1**	1.69	mg/kg	11.06.19 18.12		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.06.19 18.12	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.06.19 18.12	U	10

Certificate of Analytical Results 642000

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APS MGP Douglas, AZ

Sample Id:	**D-B30-15.0-15.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-004	Date Collected:	11.01.19 09.15	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.18	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.07.19 17.48	U	1
Acenaphthylene	208-96-8	**0.00576**	0.00166	mg/kg	11.07.19 17.48		1
Anthracene	120-12-7	**0.00379**	0.00166	mg/kg	11.07.19 17.48		1
Benzo(a)anthracene	56-55-3	**0.0168**	0.00166	mg/kg	11.07.19 17.48		1
Benzo(a)pyrene	50-32-8	**0.0290**	0.00166	mg/kg	11.07.19 17.48		1
Benzo(b)fluoranthene	205-99-2	**0.0372**	0.00166	mg/kg	11.07.19 17.48		1
Benzo(g,h,i)perylene	191-24-2	**0.0292**	0.00166	mg/kg	11.07.19 17.48		1
Benzo(k)fluoranthene	207-08-9	**0.0109**	0.00166	mg/kg	11.07.19 17.48		1
Chrysene	218-01-9	**0.0218**	0.00166	mg/kg	11.07.19 17.48		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.07.19 17.48	U	1
Fluoranthene	206-44-0	**0.0526**	0.00166	mg/kg	11.07.19 17.48		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.07.19 17.48	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0217**	0.00166	mg/kg	11.07.19 17.48		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.07.19 17.48	U	1
Phenanthrene	85-01-8	**0.0250**	0.00166	mg/kg	11.07.19 17.48		1
Pyrene	129-00-0	**0.0605**	0.00166	mg/kg	11.07.19 17.48		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	110	%	31-130	11.07.19 17.48	
2-Fluorobiphenyl	121	%	51-133	11.07.19 17.48	
Terphenyl-D14	132	%	46-137	11.07.19 17.48	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B30-19.5-20.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-005 Date Collected: 11.01.19 09.30 Sample Depth: 19.5 - 20.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.06.19 11.14	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight
Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.0**	1.82	mg/kg	11.06.19 18.15		10
Barium	7440-39-3	**142**	3.64	mg/kg	11.06.19 18.15		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.06.19 18.15	U	10
Chromium	7440-47-3	**21.8**	3.64	mg/kg	11.06.19 18.15		10
Lead	7439-92-1	**15.9**	1.82	mg/kg	11.06.19 18.15		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.06.19 18.15	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.06.19 18.15	U	10

Certificate of Analytical Results 642000

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Sample Id:	**D-B30-19.5-20.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-005	Date Collected:	11.01.19 09.30	Sample Depth:	19.5 - 20.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.21	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 18.05	U	1
Acenaphthylene	208-96-8	**0.00663**	0.00167	mg/kg	11.07.19 18.05		1
Anthracene	120-12-7	**0.00556**	0.00167	mg/kg	11.07.19 18.05		1
Benzo(a)anthracene	56-55-3	**0.0246**	0.00167	mg/kg	11.07.19 18.05		1
Benzo(a)pyrene	50-32-8	**0.0424**	0.00167	mg/kg	11.07.19 18.05		1
Benzo(b)fluoranthene	205-99-2	**0.0558**	0.00167	mg/kg	11.07.19 18.05		1
Benzo(g,h,i)perylene	191-24-2	**0.0394**	0.00167	mg/kg	11.07.19 18.05		1
Benzo(k)fluoranthene	207-08-9	**0.0135**	0.00167	mg/kg	11.07.19 18.05		1
Chrysene	218-01-9	**0.0327**	0.00167	mg/kg	11.07.19 18.05		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 18.05	U	1
Fluoranthene	206-44-0	**0.0748**	0.00167	mg/kg	11.07.19 18.05		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 18.05	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0297**	0.00167	mg/kg	11.07.19 18.05		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 18.05	U	1
Phenanthrene	85-01-8	**0.0379**	0.00167	mg/kg	11.07.19 18.05		1
Pyrene	129-00-0	**0.0845**	0.00167	mg/kg	11.07.19 18.05		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	75	%	31-130	11.07.19 18.05	
2-Fluorobiphenyl	88	%	51-133	11.07.19 18.05	
Terphenyl-D14	119	%	46-137	11.07.19 18.05	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-2.5-3.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-006 Date Collected: 11.01.19 10.40 Sample Depth: 2.5 - 3.0

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.06.19 11.00 Basis: Wet Weight
Seq Number: 3106614 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.0715**	0.0680	mg/kg	11.06.19 12.28		1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0532**	0.0182	mg/kg	11.06.19 11.16		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight
Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.2**	1.67	mg/kg	11.06.19 18.18		10
Barium	7440-39-3	**120**	3.33	mg/kg	11.06.19 18.18		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.06.19 18.18	U	10
Chromium	7440-47-3	**9.99**	3.33	mg/kg	11.06.19 18.18		10
Lead	7439-92-1	**72.8**	1.67	mg/kg	11.06.19 18.18		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.06.19 18.18	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.06.19 18.18	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-2.5-3.0** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-006 Date Collected: 11.01.19 10.40 Sample Depth: 2.5 - 3.0

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.06.19 11.34		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.19 13.30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**7.95**		SU	11.06.19 11.26		1
Temperature	TEMP	**25.1**		Deg C	11.06.19 11.26	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B21-2.5-3.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-006	Date Collected:	11.01.19 10.40	Sample Depth:	2.5 - 3.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.24	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0521**	0.0334	mg/kg	11.07.19 18.21		20
Acenaphthylene	208-96-8	**1.89**	0.0334	mg/kg	11.07.19 18.21		20
Anthracene	120-12-7	**1.38**	0.0334	mg/kg	11.07.19 18.21		20
Benzo(a)anthracene	56-55-3	**6.24**	0.0334	mg/kg	11.07.19 18.21		20
Benzo(a)pyrene	50-32-8	**11.8**	0.334	mg/kg	11.07.19 18.38	D	200
Benzo(b)fluoranthene	205-99-2	**12.3**	0.334	mg/kg	11.07.19 18.38	D	200
Benzo(g,h,i)perylene	191-24-2	**9.70**	0.334	mg/kg	11.07.19 18.38	D	200
Benzo(k)fluoranthene	207-08-9	**3.69**	0.0334	mg/kg	11.07.19 18.21		20
Chrysene	218-01-9	**8.25**	0.334	mg/kg	11.07.19 18.38	D	200
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0334	mg/kg	11.07.19 18.21	U	20
Fluoranthene	206-44-0	**20.3**	0.334	mg/kg	11.07.19 18.38	D	200
Fluorene	86-73-7	**0.366**	0.0334	mg/kg	11.07.19 18.21		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**7.56**	0.334	mg/kg	11.07.19 18.38	D	200
Naphthalene	91-20-3	**1.65**	0.334	mg/kg	11.07.19 18.21		20
Phenanthrene	85-01-8	**8.90**	0.334	mg/kg	11.07.19 18.38	D	200
Pyrene	129-00-0	**25.7**	0.334	mg/kg	11.07.19 18.38	D	200

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	88	%	31-130	11.07.19 18.21	
2-Fluorobiphenyl	90	%	51-133	11.07.19 18.21	
Terphenyl-D14	107	%	46-137	11.07.19 18.21	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-2.5-3.0**
Lab Sample Id: 642000-006
Matrix: Soil
Date Collected: 11.01.19 10.40
Date Received: 11.05.19 10.00
Sample Depth: 2.5 - 3.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,1-Dichloroethane	75-34-3	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,1-Dichloroethene	75-35-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,1-Dichloropropene	563-58-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2-Dibromoethane	106-93-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2-Dichloroethane	107-06-2	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,2-Dichloropropane	78-87-5	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,3-Dichloropropane	142-28-9	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.234	mg/kg	11.05.19 17.13	U	50
2,2-Dichloropropane	594-20-7	BRL	0.234	mg/kg	11.05.19 17.13	U	50
2-Butanone	78-93-3	BRL	0.936	mg/kg	11.05.19 17.13	U	50
2-Chlorotoluene	95-49-8	BRL	0.234	mg/kg	11.05.19 17.13	U	50
2-Hexanone	591-78-6	BRL	2.34	mg/kg	11.05.19 17.13	U	50
4-Chlorotoluene	106-43-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.34	mg/kg	11.05.19 17.13	U	50
Acetone	67-64-1	BRL	4.68	mg/kg	11.05.19 17.13	U	50
Benzene	71-43-2	BRL	0.0468	mg/kg	11.05.19 17.13	U	50
Bromobenzene	108-86-1	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Bromochloromethane	74-97-5	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Bromodichloromethane	75-27-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Bromoform	75-25-2	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Bromomethane	74-83-9	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Carbon Disulfide	75-15-0	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Carbon Tetrachloride	56-23-5	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Chlorobenzene	108-90-7	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Chloroethane	75-00-3	BRL	0.468	mg/kg	11.05.19 17.13	U	50
Chloroform	67-66-3	BRL	0.234	mg/kg	11.05.19 17.13	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-2.5-3.0**
Lab Sample Id: 642000-006
Matrix: Soil
Date Collected: 11.01.19 10.40
Date Received: 11.05.19 10.00
Sample Depth: 2.5 - 3.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.234	mg/kg	11.05.19 17.13	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.234	mg/kg	11.05.19 17.13	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Dibromochloromethane	124-48-1	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Dibromomethane	74-95-3	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Ethylbenzene	100-41-4	BRL	0.0468	mg/kg	11.05.19 17.13	U	50
Hexachlorobutadiene	87-68-3	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.936	mg/kg	11.05.19 17.13	U	50
Isopropylbenzene	98-82-8	BRL	0.234	mg/kg	11.05.19 17.13	U	50
m,p-Xylenes	179601-23-1	BRL	0.0936	mg/kg	11.05.19 17.13	U	50
Methylene Chloride	75-09-2	BRL	0.936	mg/kg	11.05.19 17.13	U	50
MTBE	1634-04-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Naphthalene	91-20-3	BRL	0.468	mg/kg	11.05.19 17.13	U	50
n-Butylbenzene	104-51-8	BRL	0.234	mg/kg	11.05.19 17.13	U	50
n-Propylbenzene	103-65-1	BRL	0.234	mg/kg	11.05.19 17.13	U	50
o-Xylene	95-47-6	BRL	0.0468	mg/kg	11.05.19 17.13	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Sec-Butylbenzene	135-98-8	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Styrene	100-42-5	BRL	0.234	mg/kg	11.05.19 17.13	U	50
tert-Butylbenzene	98-06-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Tetrachloroethylene	127-18-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Toluene	108-88-3	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Total Xylenes	1330-20-7	BRL	0.0468	mg/kg	11.05.19 17.13	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.234	mg/kg	11.05.19 17.13	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Trichloroethene	79-01-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Trichlorofluoromethane	75-69-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Vinyl Acetate	108-05-4	BRL	0.468	mg/kg	11.05.19 17.13	U	50
Vinyl Chloride	75-01-4	BRL	0.234	mg/kg	11.05.19 17.13	U	50
1,3-Butadiene	106-99-0	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Cyclohexane	110-82-7	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Dicyclopentadiene	77-73-6	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Methylcyclohexane	108-87-2	BRL	0.468	mg/kg	11.05.19 17.13	U	50
n-Hexane	110-54-3	BRL	0.468	mg/kg	11.05.19 17.13	U	50
4-Ethyltoluene	622-96-8	BRL	0.234	mg/kg	11.05.19 17.13	U	50
Propene	115-07-1	BRL	0.234	mg/kg	11.05.19 17.13	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-2.5-3.0**
Lab Sample Id: 642000-006

Matrix: Soil
Date Collected: 11.01.19 10.40

Date Received: 11.05.19 10.00
Sample Depth: 2.5 - 3.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	86	%	53-142	11.05.19 17.13	
1,2-Dichloroethane-D4	100	%	56-150	11.05.19 17.13	
Toluene-D8	101	%	70-130	11.05.19 17.13	
4-Bromofluorobenzene	99	%	68-152	11.05.19 17.13	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD02-110119** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-007 Date Collected: 11.01.19 10.45

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.06.19 11.00 Basis: Wet Weight
Seq Number: 3106614 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	**0.0969**	0.0516	mg/kg	11.06.19 12.29		1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0782**	0.0189	mg/kg	11.06.19 11.17		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight
Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.37**	1.92	mg/kg	11.06.19 18.20		10
Barium	7440-39-3	**95.2**	3.85	mg/kg	11.06.19 18.20		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.06.19 18.20	U	10
Chromium	7440-47-3	**8.56**	3.85	mg/kg	11.06.19 18.20		10
Lead	7439-92-1	**55.3**	1.92	mg/kg	11.06.19 18.20		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.06.19 18.20	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.06.19 18.20	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD02-110119** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-007 Date Collected: 11.01.19 10.45

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.06.19 11.51		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.19 13.30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.15**		SU	11.06.19 11.26		1
Temperature	TEMP	**25.0**		Deg C	11.06.19 11.26	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD02-110119**
Lab Sample Id: 642000-007

Matrix: Soil
Date Collected: 11.01.19 10.45

Date Received:11.05.19 10.00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106739

Date Prep: 11.06.19 12.27

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.0796**	0.0333	mg/kg	11.07.19 11.58		20
Acenaphthylene	208-96-8	**2.37**	0.0333	mg/kg	11.07.19 11.58		20
Anthracene	120-12-7	**1.27**	0.0333	mg/kg	11.07.19 11.58		20
Benzo(a)anthracene	56-55-3	**4.91**	0.0333	mg/kg	11.07.19 11.58		20
Benzo(a)pyrene	50-32-8	**9.38**	0.333	mg/kg	11.07.19 18.56	D	200
Benzo(b)fluoranthene	205-99-2	**9.84**	0.333	mg/kg	11.07.19 18.56	D	200
Benzo(g,h,i)perylene	191-24-2	**8.54**	0.333	mg/kg	11.07.19 18.56	D	200
Benzo(k)fluoranthene	207-08-9	**2.44**	0.0333	mg/kg	11.07.19 11.58		20
Chrysene	218-01-9	**6.30**	0.0333	mg/kg	11.07.19 11.58		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0333	mg/kg	11.07.19 11.58	U	20
Fluoranthene	206-44-0	**18.1**	0.333	mg/kg	11.07.19 18.56	D	200
Fluorene	86-73-7	**0.604**	0.0333	mg/kg	11.07.19 11.58		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**5.88**	0.0333	mg/kg	11.07.19 11.58		20
Naphthalene	91-20-3	**2.41**	0.333	mg/kg	11.07.19 11.58		20
Phenanthrene	85-01-8	**12.3**	0.333	mg/kg	11.07.19 18.56	D	200
Pyrene	129-00-0	**22.0**	0.333	mg/kg	11.07.19 18.56	D	200

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	101	%	31-130	11.07.19 11.58	
2-Fluorobiphenyl	98	%	51-133	11.07.19 11.58	
Terphenyl-D14	116	%	46-137	11.07.19 11.58	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD02-110119**
Lab Sample Id: 642000-007
Matrix: Soil
Date Collected: 11.01.19 10.45
Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,1-Dichloroethane	75-34-3	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,1-Dichloroethene	75-35-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,1-Dichloropropene	563-58-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2-Dibromoethane	106-93-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2-Dichloroethane	107-06-2	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,2-Dichloropropane	78-87-5	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,3-Dichloropropane	142-28-9	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.219	mg/kg	11.05.19 17.35	U	50
2,2-Dichloropropane	594-20-7	BRL	0.219	mg/kg	11.05.19 17.35	U	50
2-Butanone	78-93-3	BRL	0.877	mg/kg	11.05.19 17.35	U	50
2-Chlorotoluene	95-49-8	BRL	0.219	mg/kg	11.05.19 17.35	U	50
2-Hexanone	591-78-6	BRL	2.19	mg/kg	11.05.19 17.35	U	50
4-Chlorotoluene	106-43-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.19	mg/kg	11.05.19 17.35	U	50
Acetone	67-64-1	BRL	4.39	mg/kg	11.05.19 17.35	U	50
Benzene	71-43-2	BRL	0.0439	mg/kg	11.05.19 17.35	U	50
Bromobenzene	108-86-1	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Bromochloromethane	74-97-5	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Bromodichloromethane	75-27-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Bromoform	75-25-2	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Bromomethane	74-83-9	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Carbon Disulfide	75-15-0	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Carbon Tetrachloride	56-23-5	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Chlorobenzene	108-90-7	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Chloroethane	75-00-3	BRL	0.439	mg/kg	11.05.19 17.35	U	50
Chloroform	67-66-3	BRL	0.219	mg/kg	11.05.19 17.35	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD02-110119**
Lab Sample Id: 642000-007
Matrix: Soil
Date Collected: 11.01.19 10.45
Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.219	mg/kg	11.05.19 17.35	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.219	mg/kg	11.05.19 17.35	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Dibromochloromethane	124-48-1	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Dibromomethane	74-95-3	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Ethylbenzene	100-41-4	BRL	0.0439	mg/kg	11.05.19 17.35	U	50
Hexachlorobutadiene	87-68-3	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.877	mg/kg	11.05.19 17.35	U	50
Isopropylbenzene	98-82-8	BRL	0.219	mg/kg	11.05.19 17.35	U	50
m,p-Xylenes	179601-23-1	BRL	0.0877	mg/kg	11.05.19 17.35	U	50
Methylene Chloride	75-09-2	BRL	0.877	mg/kg	11.05.19 17.35	U	50
MTBE	1634-04-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Naphthalene	91-20-3	BRL	0.439	mg/kg	11.05.19 17.35	U	50
n-Butylbenzene	104-51-8	BRL	0.219	mg/kg	11.05.19 17.35	U	50
n-Propylbenzene	103-65-1	BRL	0.219	mg/kg	11.05.19 17.35	U	50
o-Xylene	95-47-6	BRL	0.0439	mg/kg	11.05.19 17.35	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Sec-Butylbenzene	135-98-8	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Styrene	100-42-5	BRL	0.219	mg/kg	11.05.19 17.35	U	50
tert-Butylbenzene	98-06-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Tetrachloroethylene	127-18-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Toluene	108-88-3	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Total Xylenes	1330-20-7	BRL	0.0439	mg/kg	11.05.19 17.35	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.219	mg/kg	11.05.19 17.35	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Trichloroethene	79-01-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Trichlorofluoromethane	75-69-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Vinyl Acetate	108-05-4	BRL	0.439	mg/kg	11.05.19 17.35	U	50
Vinyl Chloride	75-01-4	BRL	0.219	mg/kg	11.05.19 17.35	U	50
1,3-Butadiene	106-99-0	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Cyclohexane	110-82-7	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Dicyclopentadiene	77-73-6	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Methylcyclohexane	108-87-2	BRL	0.439	mg/kg	11.05.19 17.35	U	50
n-Hexane	110-54-3	BRL	0.439	mg/kg	11.05.19 17.35	U	50
4-Ethyltoluene	622-96-8	BRL	0.219	mg/kg	11.05.19 17.35	U	50
Propene	115-07-1	BRL	0.219	mg/kg	11.05.19 17.35	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD02-110119**
Lab Sample Id: 642000-007

Matrix: Soil
Date Collected: 11.01.19 10.45

Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	87	%	53-142	11.05.19 17.35	
1,2-Dichloroethane-D4	99	%	56-150	11.05.19 17.35	
Toluene-D8	102	%	70-130	11.05.19 17.35	
4-Bromofluorobenzene	94	%	68-152	11.05.19 17.35	

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Sample Id: **D-B21-5.0-5.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-008 Date Collected: 11.01.19 10.55 Sample Depth: 5.0 - 5.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0317**	0.0189	mg/kg	11.06.19 11.19		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight
Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.28**	1.96	mg/kg	11.06.19 18.23		10
Barium	7440-39-3	**660**	3.92	mg/kg	11.06.19 18.23		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.06.19 18.23	U	10
Chromium	7440-47-3	**10.4**	3.92	mg/kg	11.06.19 18.23		10
Lead	7439-92-1	**40.9**	1.96	mg/kg	11.06.19 18.23		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.06.19 18.23	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.06.19 18.23	U	10

Certificate of Analytical Results 642000

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Sample Id:	**D-B21-5.0-5.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-008	Date Collected:	11.01.19 10.55	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.30	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0333	mg/kg	11.07.19 12.14	U	20
Acenaphthylene	208-96-8	BRL	0.0333	mg/kg	11.07.19 12.14	U	20
Anthracene	120-12-7	BRL	0.0333	mg/kg	11.07.19 12.14	U	20
Benzo(a)anthracene	56-55-3	**0.0863**	0.0333	mg/kg	11.07.19 12.14		20
Benzo(a)pyrene	50-32-8	**0.154**	0.0333	mg/kg	11.07.19 12.14		20
Benzo(b)fluoranthene	205-99-2	**0.164**	0.0333	mg/kg	11.07.19 12.14		20
Benzo(g,h,i)perylene	191-24-2	**0.138**	0.0333	mg/kg	11.07.19 12.14		20
Benzo(k)fluoranthene	207-08-9	**0.0510**	0.0333	mg/kg	11.07.19 12.14		20
Chrysene	218-01-9	**0.101**	0.0333	mg/kg	11.07.19 12.14		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0333	mg/kg	11.07.19 12.14	U	20
Fluoranthene	206-44-0	**0.226**	0.0333	mg/kg	11.07.19 12.14		20
Fluorene	86-73-7	BRL	0.0333	mg/kg	11.07.19 12.14	U	20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.101**	0.0333	mg/kg	11.07.19 12.14		20
Naphthalene	91-20-3	BRL	0.333	mg/kg	11.07.19 12.14	U	20
Phenanthrene	85-01-8	**0.109**	0.0333	mg/kg	11.07.19 12.14		20
Pyrene	129-00-0	**0.297**	0.0333	mg/kg	11.07.19 12.14		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	90	%	31-130	11.07.19 12.14	
2-Fluorobiphenyl	88	%	51-133	11.07.19 12.14	
Terphenyl-D14	94	%	46-137	11.07.19 12.14	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-7.5-8.0** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-009 Date Collected: 11.01.19 11.15 Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight

Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0463**	0.0192	mg/kg	11.06.19 11.21		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight

Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**19.7**	1.92	mg/kg	11.06.19 18.26		10
Barium	7440-39-3	**144**	3.85	mg/kg	11.06.19 18.26		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.06.19 18.26	U	10
Chromium	7440-47-3	**14.7**	3.85	mg/kg	11.06.19 18.26		10
Lead	7439-92-1	**54.0**	1.92	mg/kg	11.06.19 18.26		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.06.19 18.26	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.06.19 18.26	U	10

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B21-7.5-8.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-009	Date Collected:	11.01.19 11.15	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.33	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0332	mg/kg	11.07.19 12.30	U	20
Acenaphthylene	208-96-8	**0.560**	0.0332	mg/kg	11.07.19 12.30		20
Anthracene	120-12-7	**0.346**	0.0332	mg/kg	11.07.19 12.30		20
Benzo(a)anthracene	56-55-3	**1.51**	0.0332	mg/kg	11.07.19 12.30		20
Benzo(a)pyrene	50-32-8	**2.84**	0.0332	mg/kg	11.07.19 12.30		20
Benzo(b)fluoranthene	205-99-2	**3.16**	0.0332	mg/kg	11.07.19 12.30		20
Benzo(g,h,i)perylene	191-24-2	**2.67**	0.0332	mg/kg	11.07.19 12.30		20
Benzo(k)fluoranthene	207-08-9	**0.780**	0.0332	mg/kg	11.07.19 12.30		20
Chrysene	218-01-9	**1.91**	0.0332	mg/kg	11.07.19 12.30		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0332	mg/kg	11.07.19 12.30	U	20
Fluoranthene	206-44-0	**4.90**	0.0332	mg/kg	11.07.19 12.30		20
Fluorene	86-73-7	**0.140**	0.0332	mg/kg	11.07.19 12.30		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.95**	0.0332	mg/kg	11.07.19 12.30		20
Naphthalene	91-20-3	**0.688**	0.332	mg/kg	11.07.19 12.30		20
Phenanthrene	85-01-8	**3.03**	0.0332	mg/kg	11.07.19 12.30		20
Pyrene	129-00-0	**6.58**	0.0332	mg/kg	11.07.19 12.30		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	106	%	31-130	11.07.19 12.30	
2-Fluorobiphenyl	111	%	51-133	11.07.19 12.30	
Terphenyl-D14	123	%	46-137	11.07.19 12.30	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B21-10.0-10.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-010 Date Collected: 11.01.19 11.25 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.06.19 12.21	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.05.19 16.10 Basis: Wet Weight
Seq Number: 3106697 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**19.1**	1.75	mg/kg	11.06.19 18.29		10
Barium	7440-39-3	**87.9**	3.51	mg/kg	11.06.19 18.29		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.06.19 18.29	U	10
Chromium	7440-47-3	**12.1**	3.51	mg/kg	11.06.19 18.29		10
Lead	7439-92-1	**18.5**	1.75	mg/kg	11.06.19 18.29		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.06.19 18.29	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.06.19 18.29	U	10

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B21-10.0-10.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-010	Date Collected:	11.01.19 11.25	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.36	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0333	mg/kg	11.07.19 12.46	U	20
Acenaphthylene	208-96-8	**0.525**	0.0333	mg/kg	11.07.19 12.46		20
Anthracene	120-12-7	**0.358**	0.0333	mg/kg	11.07.19 12.46		20
Benzo(a)anthracene	56-55-3	**1.50**	0.0333	mg/kg	11.07.19 12.46		20
Benzo(a)pyrene	50-32-8	**2.78**	0.0333	mg/kg	11.07.19 12.46		20
Benzo(b)fluoranthene	205-99-2	**3.04**	0.0333	mg/kg	11.07.19 12.46		20
Benzo(g,h,i)perylene	191-24-2	**2.59**	0.0333	mg/kg	11.07.19 12.46		20
Benzo(k)fluoranthene	207-08-9	**0.792**	0.0333	mg/kg	11.07.19 12.46		20
Chrysene	218-01-9	**1.87**	0.0333	mg/kg	11.07.19 12.46		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0333	mg/kg	11.07.19 12.46	U	20
Fluoranthene	206-44-0	**4.62**	0.0333	mg/kg	11.07.19 12.46		20
Fluorene	86-73-7	**0.138**	0.0333	mg/kg	11.07.19 12.46		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.88**	0.0333	mg/kg	11.07.19 12.46		20
Naphthalene	91-20-3	**0.361**	0.333	mg/kg	11.07.19 12.46		20
Phenanthrene	85-01-8	**2.71**	0.0333	mg/kg	11.07.19 12.46		20
Pyrene	129-00-0	**6.25**	0.0333	mg/kg	11.07.19 12.46		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	90	%	31-130	11.07.19 12.46	
2-Fluorobiphenyl	103	%	51-133	11.07.19 12.46	
Terphenyl-D14	121	%	46-137	11.07.19 12.46	

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Sample Id: **D-B21-15.0-15.5**
Lab Sample Id: 642000-011
Matrix: Soil
Date Collected: 11.01.19 11.35
Date Received: 11.05.19 10.00
Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106627
Date Prep: 11.06.19 07.40
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0235**	0.0189	mg/kg	11.06.19 12.23		1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106630
Date Prep: 11.06.19 09.30
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**19.6**	1.69	mg/kg	11.06.19 15.50		10
Barium	7440-39-3	**232**	3.39	mg/kg	11.06.19 15.50		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.06.19 15.50	U	10
Chromium	7440-47-3	**17.8**	3.39	mg/kg	11.06.19 15.50		10
Lead	7439-92-1	**53.8**	1.69	mg/kg	11.06.19 15.50		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.06.19 15.50	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.06.19 15.50	U	10

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Sample Id:	**D-B21-15.0-15.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-011	Date Collected:	11.01.19 11.35	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.39	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0333	mg/kg	11.07.19 13.05	U	20
Acenaphthylene	208-96-8	**0.538**	0.0333	mg/kg	11.07.19 13.05		20
Anthracene	120-12-7	**0.347**	0.0333	mg/kg	11.07.19 13.05		20
Benzo(a)anthracene	56-55-3	**1.52**	0.0333	mg/kg	11.07.19 13.05		20
Benzo(a)pyrene	50-32-8	**2.73**	0.0333	mg/kg	11.07.19 13.05		20
Benzo(b)fluoranthene	205-99-2	**3.04**	0.0333	mg/kg	11.07.19 13.05		20
Benzo(g,h,i)perylene	191-24-2	**2.60**	0.0333	mg/kg	11.07.19 13.05		20
Benzo(k)fluoranthene	207-08-9	**0.698**	0.0333	mg/kg	11.07.19 13.05		20
Chrysene	218-01-9	**1.89**	0.0333	mg/kg	11.07.19 13.05		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0333	mg/kg	11.07.19 13.05	U	20
Fluoranthene	206-44-0	**4.96**	0.0333	mg/kg	11.07.19 13.05		20
Fluorene	86-73-7	**0.141**	0.0333	mg/kg	11.07.19 13.05		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**1.88**	0.0333	mg/kg	11.07.19 13.05		20
Naphthalene	91-20-3	**0.514**	0.333	mg/kg	11.07.19 13.05		20
Phenanthrene	85-01-8	**3.12**	0.0333	mg/kg	11.07.19 13.05		20
Pyrene	129-00-0	**6.63**	0.0333	mg/kg	11.07.19 13.05		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	82	%	31-130	11.07.19 13.05	
2-Fluorobiphenyl	86	%	51-133	11.07.19 13.05	
Terphenyl-D14	106	%	46-137	11.07.19 13.05	

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Sample Id: **D-B21-19.5-20.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-012 Date Collected: 11.01.19 11.45 Sample Depth: 19.5 - 20.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.06.19 12.25	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight
Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.4**	1.89	mg/kg	11.06.19 15.56		10
Barium	7440-39-3	**64.3**	3.77	mg/kg	11.06.19 15.56		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.06.19 15.56	U	10
Chromium	7440-47-3	**38.9**	3.77	mg/kg	11.06.19 15.56		10
Lead	7439-92-1	**10.7**	1.89	mg/kg	11.06.19 15.56		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.06.19 15.56	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.06.19 15.56	U	10

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Sample Id:	**D-B21-19.5-20.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-012	Date Collected:	11.01.19 11.45	Sample Depth:	19.5 - 20.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.42	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	11.07.19 13.21	U	10
Acenaphthylene	208-96-8	**0.0541**	0.0167	mg/kg	11.07.19 13.21		10
Anthracene	120-12-7	**0.0325**	0.0167	mg/kg	11.07.19 13.21		10
Benzo(a)anthracene	56-55-3	**0.156**	0.0167	mg/kg	11.07.19 13.21		10
Benzo(a)pyrene	50-32-8	**0.301**	0.0167	mg/kg	11.07.19 13.21		10
Benzo(b)fluoranthene	205-99-2	**0.327**	0.0167	mg/kg	11.07.19 13.21		10
Benzo(g,h,i)perylene	191-24-2	**0.295**	0.0167	mg/kg	11.07.19 13.21		10
Benzo(k)fluoranthene	207-08-9	**0.0947**	0.0167	mg/kg	11.07.19 13.21		10
Chrysene	218-01-9	**0.193**	0.0167	mg/kg	11.07.19 13.21		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.07.19 13.21	U	10
Fluoranthene	206-44-0	**0.512**	0.0167	mg/kg	11.07.19 13.21		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	11.07.19 13.21	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.213**	0.0167	mg/kg	11.07.19 13.21		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	11.07.19 13.21	U	10
Phenanthrene	85-01-8	**0.267**	0.0167	mg/kg	11.07.19 13.21		10
Pyrene	129-00-0	**0.703**	0.0167	mg/kg	11.07.19 13.21		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	99	%	31-130	11.07.19 13.21	
2-Fluorobiphenyl	108	%	51-133	11.07.19 13.21	
Terphenyl-D14	120	%	46-137	11.07.19 13.21	

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Sample Id: **D-B21-24.5-25.0** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-013 Date Collected: 11.01.19 13.05 Sample Depth: 24.5 - 25.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight

Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.06.19 12.27	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**7.08**	1.85	mg/kg	11.06.19 15.59		10
Barium	7440-39-3	**89.3**	3.70	mg/kg	11.06.19 15.59		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.06.19 15.59	U	10
Chromium	7440-47-3	**28.5**	3.70	mg/kg	11.06.19 15.59		10
Lead	7439-92-1	**8.11**	1.85	mg/kg	11.06.19 15.59		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.06.19 15.59	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.06.19 15.59	U	10

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Sample Id:	**D-B21-24.5-25.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-013	Date Collected:	11.01.19 13.05	Sample Depth:	24.5 - 25.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.45	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 15.18	U	1
Acenaphthylene	208-96-8	**0.00934**	0.00167	mg/kg	11.07.19 15.18		1
Anthracene	120-12-7	**0.00600**	0.00167	mg/kg	11.07.19 15.18		1
Benzo(a)anthracene	56-55-3	**0.0293**	0.00167	mg/kg	11.07.19 15.18		1
Benzo(a)pyrene	50-32-8	**0.0544**	0.00167	mg/kg	11.07.19 15.18		1
Benzo(b)fluoranthene	205-99-2	**0.0596**	0.00167	mg/kg	11.07.19 15.18		1
Benzo(g,h,i)perylene	191-24-2	**0.0453**	0.00167	mg/kg	11.07.19 15.18		1
Benzo(k)fluoranthene	207-08-9	**0.0209**	0.00167	mg/kg	11.07.19 15.18		1
Chrysene	218-01-9	**0.0357**	0.00167	mg/kg	11.07.19 15.18		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 15.18	U	1
Fluoranthene	206-44-0	**0.0957**	0.00167	mg/kg	11.07.19 15.18		1
Fluorene	86-73-7	**0.00235**	0.00167	mg/kg	11.07.19 15.18		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0342**	0.00167	mg/kg	11.07.19 15.18		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 15.18	U	1
Phenanthrene	85-01-8	**0.0523**	0.00167	mg/kg	11.07.19 15.18		1
Pyrene	129-00-0	**0.128**	0.00167	mg/kg	11.07.19 15.18		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	103	%	31-130	11.07.19 15.18	
2-Fluorobiphenyl	114	%	51-133	11.07.19 15.18	
Terphenyl-D14	125	%	46-137	11.07.19 15.18	

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Sample Id: **D-B15-1.0-1.5** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-014 Date Collected: 11.01.19 13.55 Sample Depth: 1.0 - 1.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight

Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0445**	0.0172	mg/kg	11.06.19 12.29		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.77**	2.00	mg/kg	11.06.19 16.02		10
Barium	7440-39-3	**144**	4.00	mg/kg	11.06.19 16.02		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.06.19 16.02	U	10
Chromium	7440-47-3	**7.42**	4.00	mg/kg	11.06.19 16.02		10
Lead	7439-92-1	**56.2**	2.00	mg/kg	11.06.19 16.02		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.06.19 16.02	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.06.19 16.02	U	10

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Sample Id:	**D-B15-1.0-1.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-014	Date Collected:	11.01.19 13.55	Sample Depth:	1.0 - 1.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.48	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00833	mg/kg	11.07.19 17.32	U	5
Acenaphthylene	208-96-8	BRL	0.00833	mg/kg	11.07.19 17.32	U	5
Anthracene	120-12-7	BRL	0.00833	mg/kg	11.07.19 17.32	U	5
Benzo(a)anthracene	56-55-3	BRL	0.00833	mg/kg	11.07.19 17.32	U	5
Benzo(a)pyrene	50-32-8	**0.0115**	0.00833	mg/kg	11.07.19 17.32		5
Benzo(b)fluoranthene	205-99-2	**0.0168**	0.00833	mg/kg	11.07.19 17.32		5
Benzo(g,h,i)perylene	191-24-2	**0.0193**	0.00833	mg/kg	11.07.19 17.32		5
Benzo(k)fluoranthene	207-08-9	BRL	0.00833	mg/kg	11.07.19 17.32	U	5
Chrysene	218-01-9	**0.0141**	0.00833	mg/kg	11.07.19 17.32		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00833	mg/kg	11.07.19 17.32	U	5
Fluoranthene	206-44-0	**0.0147**	0.00833	mg/kg	11.07.19 17.32		5
Fluorene	86-73-7	BRL	0.00833	mg/kg	11.07.19 17.32	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0102**	0.00833	mg/kg	11.07.19 17.32		5
Naphthalene	91-20-3	BRL	0.0833	mg/kg	11.07.19 17.32	U	5
Phenanthrene	85-01-8	**0.0118**	0.00833	mg/kg	11.07.19 17.32		5
Pyrene	129-00-0	**0.0170**	0.00833	mg/kg	11.07.19 17.32		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	79	%	31-130	11.07.19 17.32	
2-Fluorobiphenyl	70	%	51-133	11.07.19 17.32	
Terphenyl-D14	74	%	46-137	11.07.19 17.32	

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Sample Id: **D-B15-2.5-3.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-015 Date Collected: 11.01.19 14.10 Sample Depth: 2.5 - 3.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0450**	0.0189	mg/kg	11.06.19 10.53		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight
Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**10.8**	1.75	mg/kg	11.06.19 15.26		10
Barium	7440-39-3	**141**	3.51	mg/kg	11.06.19 15.26		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.06.19 15.26	U	10
Chromium	7440-47-3	**11.1**	3.51	mg/kg	11.06.19 15.26		10
Lead	7439-92-1	**30.5**	1.75	mg/kg	11.06.19 15.26		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.06.19 15.26	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.06.19 15.26	U	10

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Sample Id:	**D-B15-2.5-3.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-015	Date Collected:	11.01.19 14.10	Sample Depth:	2.5 - 3.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 12.51	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00833	mg/kg	11.08.19 00.47	U	5
Acenaphthylene	208-96-8	**0.00936**	0.00833	mg/kg	11.08.19 00.47		5
Anthracene	120-12-7	**0.00878**	0.00833	mg/kg	11.08.19 00.47		5
Benzo(a)anthracene	56-55-3	**0.0242**	0.00833	mg/kg	11.08.19 00.47		5
Benzo(a)pyrene	50-32-8	**0.0329**	0.00833	mg/kg	11.08.19 00.47		5
Benzo(b)fluoranthene	205-99-2	**0.0454**	0.00833	mg/kg	11.08.19 00.47		5
Benzo(g,h,i)perylene	191-24-2	**0.0228**	0.00833	mg/kg	11.08.19 00.47		5
Benzo(k)fluoranthene	207-08-9	**0.00917**	0.00833	mg/kg	11.08.19 00.47		5
Chrysene	218-01-9	**0.0341**	0.00833	mg/kg	11.08.19 00.47		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00833	mg/kg	11.08.19 00.47	U	5
Fluoranthene	206-44-0	**0.0644**	0.00833	mg/kg	11.08.19 00.47		5
Fluorene	86-73-7	BRL	0.00833	mg/kg	11.08.19 00.47	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0149**	0.00833	mg/kg	11.08.19 00.47		5
Naphthalene	91-20-3	BRL	0.0833	mg/kg	11.08.19 00.47	U	5
Phenanthrene	85-01-8	**0.0504**	0.00833	mg/kg	11.08.19 00.47		5
Pyrene	129-00-0	**0.0776**	0.00833	mg/kg	11.08.19 00.47		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	66	%	31-130	11.08.19 00.47	
2-Fluorobiphenyl	96	%	51-133	11.08.19 00.47	
Terphenyl-D14	99	%	46-137	11.08.19 00.47	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B15-5.0-5.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-016 Date Collected: 11.01.19 14.25 Sample Depth: 5.0 - 5.5

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.06.19 11.00 Basis: Wet Weight
Seq Number: 3106614 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0601	mg/kg	11.06.19 12.31	U	1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0391**	0.0190	mg/kg	11.06.19 12.31		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight
Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.8**	1.89	mg/kg	11.06.19 16.05		10
Barium	7440-39-3	**160**	3.77	mg/kg	11.06.19 16.05		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.06.19 16.05	U	10
Chromium	7440-47-3	**13.2**	3.77	mg/kg	11.06.19 16.05		10
Lead	7439-92-1	**44.7**	1.89	mg/kg	11.06.19 16.05		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.06.19 16.05	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.06.19 16.05	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B15-5.0-5.5** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-016 Date Collected: 11.01.19 14.25 Sample Depth: 5.0 - 5.5

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.06.19 12.10		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.19 13.30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**7.91**		SU	11.06.19 11.26		1
Temperature	TEMP	**25.6**		Deg C	11.06.19 11.26	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B15-5.0-5.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-016	Date Collected:	11.01.19 14.25	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 13.00	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0333	mg/kg	11.07.19 13.55	U	20
Acenaphthylene	208-96-8	**0.0510**	0.0333	mg/kg	11.07.19 13.55		20
Anthracene	120-12-7	**0.0341**	0.0333	mg/kg	11.07.19 13.55		20
Benzo(a)anthracene	56-55-3	**0.131**	0.0333	mg/kg	11.07.19 13.55		20
Benzo(a)pyrene	50-32-8	**0.201**	0.0333	mg/kg	11.07.19 13.55		20
Benzo(b)fluoranthene	205-99-2	**0.227**	0.0333	mg/kg	11.07.19 13.55		20
Benzo(g,h,i)perylene	191-24-2	**0.149**	0.0333	mg/kg	11.07.19 13.55		20
Benzo(k)fluoranthene	207-08-9	**0.0709**	0.0333	mg/kg	11.07.19 13.55		20
Chrysene	218-01-9	**0.151**	0.0333	mg/kg	11.07.19 13.55		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0333	mg/kg	11.07.19 13.55	U	20
Fluoranthene	206-44-0	**0.420**	0.0333	mg/kg	11.07.19 13.55		20
Fluorene	86-73-7	BRL	0.0333	mg/kg	11.07.19 13.55	U	20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.116**	0.0333	mg/kg	11.07.19 13.55		20
Naphthalene	91-20-3	BRL	0.333	mg/kg	11.07.19 13.55	U	20
Phenanthrene	85-01-8	**0.298**	0.0333	mg/kg	11.07.19 13.55		20
Pyrene	129-00-0	**0.533**	0.0333	mg/kg	11.07.19 13.55		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	85	%	31-130	11.07.19 13.55	
2-Fluorobiphenyl	91	%	51-133	11.07.19 13.55	
Terphenyl-D14	103	%	46-137	11.07.19 13.55	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B15-5.0-5.5**
Lab Sample Id: 642000-016
Matrix: Soil
Date Collected: 11.01.19 14.25
Date Received: 11.05.19 10.00
Sample Depth: 5.0 - 5.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,1-Dichloroethane	75-34-3	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,1-Dichloroethene	75-35-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,1-Dichloropropene	563-58-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2-Dibromoethane	106-93-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2-Dichloroethane	107-06-2	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,2-Dichloropropane	78-87-5	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,3-Dichloropropane	142-28-9	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.247	mg/kg	11.05.19 17.56	U	50
2,2-Dichloropropane	594-20-7	BRL	0.247	mg/kg	11.05.19 17.56	U	50
2-Butanone	78-93-3	BRL	0.988	mg/kg	11.05.19 17.56	U	50
2-Chlorotoluene	95-49-8	BRL	0.247	mg/kg	11.05.19 17.56	U	50
2-Hexanone	591-78-6	BRL	2.47	mg/kg	11.05.19 17.56	U	50
4-Chlorotoluene	106-43-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.47	mg/kg	11.05.19 17.56	U	50
Acetone	67-64-1	BRL	4.94	mg/kg	11.05.19 17.56	U	50
Benzene	71-43-2	BRL	0.0494	mg/kg	11.05.19 17.56	U	50
Bromobenzene	108-86-1	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Bromochloromethane	74-97-5	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Bromodichloromethane	75-27-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Bromoform	75-25-2	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Bromomethane	74-83-9	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Carbon Disulfide	75-15-0	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Carbon Tetrachloride	56-23-5	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Chlorobenzene	108-90-7	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Chloroethane	75-00-3	BRL	0.494	mg/kg	11.05.19 17.56	U	50
Chloroform	67-66-3	BRL	0.247	mg/kg	11.05.19 17.56	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B15-5.0-5.5**
Lab Sample Id: 642000-016
Matrix: Soil
Date Collected: 11.01.19 14.25
Date Received: 11.05.19 10.00
Sample Depth: 5.0 - 5.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.247	mg/kg	11.05.19 17.56	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.247	mg/kg	11.05.19 17.56	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Dibromochloromethane	124-48-1	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Dibromomethane	74-95-3	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Ethylbenzene	100-41-4	BRL	0.0494	mg/kg	11.05.19 17.56	U	50
Hexachlorobutadiene	87-68-3	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.988	mg/kg	11.05.19 17.56	U	50
Isopropylbenzene	98-82-8	BRL	0.247	mg/kg	11.05.19 17.56	U	50
m,p-Xylenes	179601-23-1	BRL	0.0988	mg/kg	11.05.19 17.56	U	50
Methylene Chloride	75-09-2	BRL	0.988	mg/kg	11.05.19 17.56	U	50
MTBE	1634-04-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Naphthalene	91-20-3	BRL	0.494	mg/kg	11.05.19 17.56	U	50
n-Butylbenzene	104-51-8	BRL	0.247	mg/kg	11.05.19 17.56	U	50
n-Propylbenzene	103-65-1	BRL	0.247	mg/kg	11.05.19 17.56	U	50
o-Xylene	95-47-6	BRL	0.0494	mg/kg	11.05.19 17.56	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Sec-Butylbenzene	135-98-8	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Styrene	100-42-5	BRL	0.247	mg/kg	11.05.19 17.56	U	50
tert-Butylbenzene	98-06-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Tetrachloroethylene	127-18-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Toluene	108-88-3	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Total Xylenes	1330-20-7	BRL	0.0494	mg/kg	11.05.19 17.56	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.247	mg/kg	11.05.19 17.56	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Trichloroethene	79-01-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Trichlorofluoromethane	75-69-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Vinyl Acetate	108-05-4	BRL	0.494	mg/kg	11.05.19 17.56	U	50
Vinyl Chloride	75-01-4	BRL	0.247	mg/kg	11.05.19 17.56	U	50
1,3-Butadiene	106-99-0	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Cyclohexane	110-82-7	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Dicyclopentadiene	77-73-6	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Methylcyclohexane	108-87-2	BRL	0.494	mg/kg	11.05.19 17.56	U	50
n-Hexane	110-54-3	BRL	0.494	mg/kg	11.05.19 17.56	U	50
4-Ethyltoluene	622-96-8	BRL	0.247	mg/kg	11.05.19 17.56	U	50
Propene	115-07-1	BRL	0.247	mg/kg	11.05.19 17.56	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B15-5.0-5.5**
Lab Sample Id: 642000-016

Matrix: Soil
Date Collected: 11.01.19 14.25

Date Received: 11.05.19 10.00
Sample Depth: 5.0 - 5.5

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	84	%	53-142	11.05.19 17.56	
1,2-Dichloroethane-D4	96	%	56-150	11.05.19 17.56	
Toluene-D8	103	%	70-130	11.05.19 17.56	
4-Bromofluorobenzene	97	%	68-152	11.05.19 17.56	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD03-110119** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-017 Date Collected: 11.01.19 14.35

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P

Tech: KCS % Moisture:

Analyst: KCS Date Prep: 11.06.19 11.00 Basis: Wet Weight

Seq Number: 3106614 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0599	mg/kg	11.06.19 12.35	U	1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight

Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0247**	0.0182	mg/kg	11.06.19 12.36		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.2**	1.69	mg/kg	11.06.19 16.08		10
Barium	7440-39-3	**98.0**	3.39	mg/kg	11.06.19 16.08		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.06.19 16.08	U	10
Chromium	7440-47-3	**15.1**	3.39	mg/kg	11.06.19 16.08		10
Lead	7439-92-1	**30.5**	1.69	mg/kg	11.06.19 16.08		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.06.19 16.08	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.06.19 16.08	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD03-110119** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-017 Date Collected: 11.01.19 14.35

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.06.19 12.26		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.19 13.30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.03**		SU	11.06.19 11.26		1
Temperature	TEMP	**25.2**		Deg C	11.06.19 11.26	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD03-110119**
Lab Sample Id: 642000-017

Matrix: Soil
Date Collected: 11.01.19 14.35

Date Received:11.05.19 10.00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106739

Date Prep: 11.06.19 13.03

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0333	mg/kg	11.07.19 14.11	U	20
Acenaphthylene	208-96-8	**0.128**	0.0333	mg/kg	11.07.19 14.11		20
Anthracene	120-12-7	**0.0837**	0.0333	mg/kg	11.07.19 14.11		20
Benzo(a)anthracene	56-55-3	**0.286**	0.0333	mg/kg	11.07.19 14.11		20
Benzo(a)pyrene	50-32-8	**0.467**	0.0333	mg/kg	11.07.19 14.11		20
Benzo(b)fluoranthene	205-99-2	**0.519**	0.0333	mg/kg	11.07.19 14.11		20
Benzo(g,h,i)perylene	191-24-2	**0.365**	0.0333	mg/kg	11.07.19 14.11		20
Benzo(k)fluoranthene	207-08-9	**0.163**	0.0333	mg/kg	11.07.19 14.11		20
Chrysene	218-01-9	**0.339**	0.0333	mg/kg	11.07.19 14.11		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0333	mg/kg	11.07.19 14.11	U	20
Fluoranthene	206-44-0	**0.930**	0.0333	mg/kg	11.07.19 14.11		20
Fluorene	86-73-7	BRL	0.0333	mg/kg	11.07.19 14.11	U	20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.280**	0.0333	mg/kg	11.07.19 14.11		20
Naphthalene	91-20-3	BRL	0.333	mg/kg	11.07.19 14.11	U	20
Phenanthrene	85-01-8	**0.701**	0.0333	mg/kg	11.07.19 14.11		20
Pyrene	129-00-0	**1.17**	0.0333	mg/kg	11.07.19 14.11		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	89	%	31-130	11.07.19 14.11	
2-Fluorobiphenyl	99	%	51-133	11.07.19 14.11	
Terphenyl-D14	113	%	46-137	11.07.19 14.11	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD03-110119**
Lab Sample Id: 642000-017
Matrix: Soil
Date Collected: 11.01.19 14.35
Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,1-Dichloroethane	75-34-3	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,1-Dichloroethene	75-35-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,1-Dichloropropene	563-58-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2-Dibromoethane	106-93-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2-Dichloroethane	107-06-2	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,2-Dichloropropane	78-87-5	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,3-Dichloropropane	142-28-9	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.249	mg/kg	11.05.19 18.18	U	50
2,2-Dichloropropane	594-20-7	BRL	0.249	mg/kg	11.05.19 18.18	U	50
2-Butanone	78-93-3	BRL	0.996	mg/kg	11.05.19 18.18	U	50
2-Chlorotoluene	95-49-8	BRL	0.249	mg/kg	11.05.19 18.18	U	50
2-Hexanone	591-78-6	BRL	2.49	mg/kg	11.05.19 18.18	U	50
4-Chlorotoluene	106-43-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.49	mg/kg	11.05.19 18.18	U	50
Acetone	67-64-1	BRL	4.98	mg/kg	11.05.19 18.18	U	50
Benzene	71-43-2	BRL	0.0498	mg/kg	11.05.19 18.18	U	50
Bromobenzene	108-86-1	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Bromochloromethane	74-97-5	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Bromodichloromethane	75-27-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Bromoform	75-25-2	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Bromomethane	74-83-9	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Carbon Disulfide	75-15-0	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Carbon Tetrachloride	56-23-5	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Chlorobenzene	108-90-7	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Chloroethane	75-00-3	BRL	0.498	mg/kg	11.05.19 18.18	U	50
Chloroform	67-66-3	BRL	0.249	mg/kg	11.05.19 18.18	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD03-110119**
Lab Sample Id: 642000-017
Matrix: Soil
Date Collected: 11.01.19 14.35
Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.249	mg/kg	11.05.19 18.18	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.249	mg/kg	11.05.19 18.18	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Dibromochloromethane	124-48-1	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Dibromomethane	74-95-3	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Ethylbenzene	100-41-4	BRL	0.0498	mg/kg	11.05.19 18.18	U	50
Hexachlorobutadiene	87-68-3	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.996	mg/kg	11.05.19 18.18	U	50
Isopropylbenzene	98-82-8	BRL	0.249	mg/kg	11.05.19 18.18	U	50
m,p-Xylenes	179601-23-1	BRL	0.0996	mg/kg	11.05.19 18.18	U	50
Methylene Chloride	75-09-2	BRL	0.996	mg/kg	11.05.19 18.18	U	50
MTBE	1634-04-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Naphthalene	91-20-3	BRL	0.498	mg/kg	11.05.19 18.18	U	50
n-Butylbenzene	104-51-8	BRL	0.249	mg/kg	11.05.19 18.18	U	50
n-Propylbenzene	103-65-1	BRL	0.249	mg/kg	11.05.19 18.18	U	50
o-Xylene	95-47-6	BRL	0.0498	mg/kg	11.05.19 18.18	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Sec-Butylbenzene	135-98-8	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Styrene	100-42-5	BRL	0.249	mg/kg	11.05.19 18.18	U	50
tert-Butylbenzene	98-06-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Tetrachloroethylene	127-18-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Toluene	108-88-3	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Total Xylenes	1330-20-7	BRL	0.0498	mg/kg	11.05.19 18.18	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.249	mg/kg	11.05.19 18.18	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Trichloroethene	79-01-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Trichlorofluoromethane	75-69-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Vinyl Acetate	108-05-4	BRL	0.498	mg/kg	11.05.19 18.18	U	50
Vinyl Chloride	75-01-4	BRL	0.249	mg/kg	11.05.19 18.18	U	50
1,3-Butadiene	106-99-0	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Cyclohexane	110-82-7	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Dicyclopentadiene	77-73-6	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Methylcyclohexane	108-87-2	BRL	0.498	mg/kg	11.05.19 18.18	U	50
n-Hexane	110-54-3	BRL	0.498	mg/kg	11.05.19 18.18	U	50
4-Ethyltoluene	622-96-8	BRL	0.249	mg/kg	11.05.19 18.18	U	50
Propene	115-07-1	BRL	0.249	mg/kg	11.05.19 18.18	U	50

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Sample Id: **D-FD03-110119**
Lab Sample Id: 642000-017

Matrix: Soil
Date Collected: 11.01.19 14.35

Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	86	%	53-142	11.05.19 18.18	
1,2-Dichloroethane-D4	102	%	56-150	11.05.19 18.18	
Toluene-D8	101	%	70-130	11.05.19 18.18	
4-Bromofluorobenzene	96	%	68-152	11.05.19 18.18	

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Sample Id: **D-B15-7.5-8.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-018 Date Collected: 11.01.19 14.45 Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0212**	0.0196	mg/kg	11.06.19 12.38		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight
Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.4**	1.82	mg/kg	11.06.19 16.11		10
Barium	7440-39-3	**125**	3.64	mg/kg	11.06.19 16.11		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.06.19 16.11	U	10
Chromium	7440-47-3	**15.9**	3.64	mg/kg	11.06.19 16.11		10
Lead	7439-92-1	**32.8**	1.82	mg/kg	11.06.19 16.11		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.06.19 16.11	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.06.19 16.11	U	10

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Sample Id:	**D-B15-7.5-8.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-018	Date Collected:	11.01.19 14.45	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 13.06	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0334	mg/kg	11.07.19 14.28	U	20
Acenaphthylene	208-96-8	**0.327**	0.0334	mg/kg	11.07.19 14.28		20
Anthracene	120-12-7	**0.221**	0.0334	mg/kg	11.07.19 14.28		20
Benzo(a)anthracene	56-55-3	**0.658**	0.0334	mg/kg	11.07.19 14.28		20
Benzo(a)pyrene	50-32-8	**1.07**	0.0334	mg/kg	11.07.19 14.28		20
Benzo(b)fluoranthene	205-99-2	**1.27**	0.0334	mg/kg	11.07.19 14.28		20
Benzo(g,h,i)perylene	191-24-2	**0.778**	0.0334	mg/kg	11.07.19 14.28		20
Benzo(k)fluoranthene	207-08-9	**0.324**	0.0334	mg/kg	11.07.19 14.28		20
Chrysene	218-01-9	**0.777**	0.0334	mg/kg	11.07.19 14.28		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0334	mg/kg	11.07.19 14.28	U	20
Fluoranthene	206-44-0	**2.04**	0.0334	mg/kg	11.07.19 14.28		20
Fluorene	86-73-7	**0.0844**	0.0334	mg/kg	11.07.19 14.28		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.611**	0.0334	mg/kg	11.07.19 14.28		20
Naphthalene	91-20-3	BRL	0.334	mg/kg	11.07.19 14.28	U	20
Phenanthrene	85-01-8	**1.54**	0.0334	mg/kg	11.07.19 14.28		20
Pyrene	129-00-0	**2.57**	0.0334	mg/kg	11.07.19 14.28		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	87	%	31-130	11.07.19 14.28	
2-Fluorobiphenyl	90	%	51-133	11.07.19 14.28	
Terphenyl-D14	100	%	46-137	11.07.19 14.28	

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Sample Id: **D-B15-10.0-10.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-019 Date Collected: 11.01.19 14.50 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0200	mg/kg	11.06.19 12.40	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight
Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.6**	1.89	mg/kg	11.06.19 16.13		10
Barium	7440-39-3	**254**	3.77	mg/kg	11.06.19 16.13		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.06.19 16.13	U	10
Chromium	7440-47-3	**14.6**	3.77	mg/kg	11.06.19 16.13		10
Lead	7439-92-1	**12.6**	1.89	mg/kg	11.06.19 16.13		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.06.19 16.13	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.06.19 16.13	U	10

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Sample Id:	**D-B15-10.0-10.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-019	Date Collected:	11.01.19 14.50	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 13.09	Basis:	Wet Weight
Seq Number:	3106739			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0167	mg/kg	11.07.19 14.44	U	10
Acenaphthylene	208-96-8	**0.0489**	0.0167	mg/kg	11.07.19 14.44		10
Anthracene	120-12-7	**0.0300**	0.0167	mg/kg	11.07.19 14.44		10
Benzo(a)anthracene	56-55-3	**0.0935**	0.0167	mg/kg	11.07.19 14.44		10
Benzo(a)pyrene	50-32-8	**0.144**	0.0167	mg/kg	11.07.19 14.44		10
Benzo(b)fluoranthene	205-99-2	**0.162**	0.0167	mg/kg	11.07.19 14.44		10
Benzo(g,h,i)perylene	191-24-2	**0.108**	0.0167	mg/kg	11.07.19 14.44		10
Benzo(k)fluoranthene	207-08-9	**0.0546**	0.0167	mg/kg	11.07.19 14.44		10
Chrysene	218-01-9	**0.106**	0.0167	mg/kg	11.07.19 14.44		10
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0167	mg/kg	11.07.19 14.44	U	10
Fluoranthene	206-44-0	**0.319**	0.0167	mg/kg	11.07.19 14.44		10
Fluorene	86-73-7	BRL	0.0167	mg/kg	11.07.19 14.44	U	10
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0862**	0.0167	mg/kg	11.07.19 14.44		10
Naphthalene	91-20-3	BRL	0.167	mg/kg	11.07.19 14.44	U	10
Phenanthrene	85-01-8	**0.269**	0.0167	mg/kg	11.07.19 14.44		10
Pyrene	129-00-0	**0.390**	0.0167	mg/kg	11.07.19 14.44		10

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	86	%	31-130	11.07.19 14.44	
2-Fluorobiphenyl	99	%	51-133	11.07.19 14.44	
Terphenyl-D14	104	%	46-137	11.07.19 14.44	

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Sample Id: **D-FD04-110119** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-020 Date Collected: 11.01.19 14.55

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight

Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.06.19 13.01	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**24.0**	1.82	mg/kg	11.06.19 16.16		10
Barium	7440-39-3	**302**	3.64	mg/kg	11.06.19 16.16		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.06.19 16.16	U	10
Chromium	7440-47-3	**21.7**	3.64	mg/kg	11.06.19 16.16		10
Lead	7439-92-1	**15.5**	1.82	mg/kg	11.06.19 16.16		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.06.19 16.16	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.06.19 16.16	U	10

Certificate of Analytical Results 642000

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Sample Id: **D-FD04-110119**
Lab Sample Id: 642000-020

Matrix: Soil
Date Collected: 11.01.19 14.55

Date Received:11.05.19 10.00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106739

Date Prep: 11.06.19 13.12

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.0333	mg/kg	11.07.19 15.01	U	20
Acenaphthylene	208-96-8	**0.132**	0.0333	mg/kg	11.07.19 15.01		20
Anthracene	120-12-7	**0.0786**	0.0333	mg/kg	11.07.19 15.01		20
Benzo(a)anthracene	56-55-3	**0.275**	0.0333	mg/kg	11.07.19 15.01		20
Benzo(a)pyrene	50-32-8	**0.487**	0.0333	mg/kg	11.07.19 15.01		20
Benzo(b)fluoranthene	205-99-2	**0.588**	0.0333	mg/kg	11.07.19 15.01		20
Benzo(g,h,i)perylene	191-24-2	**0.391**	0.0333	mg/kg	11.07.19 15.01		20
Benzo(k)fluoranthene	207-08-9	**0.148**	0.0333	mg/kg	11.07.19 15.01		20
Chrysene	218-01-9	**0.358**	0.0333	mg/kg	11.07.19 15.01		20
Dibenz(a,h)Anthracene	53-70-3	BRL	0.0333	mg/kg	11.07.19 15.01	U	20
Fluoranthene	206-44-0	**1.12**	0.0333	mg/kg	11.07.19 15.01		20
Fluorene	86-73-7	**0.0375**	0.0333	mg/kg	11.07.19 15.01		20
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.301**	0.0333	mg/kg	11.07.19 15.01		20
Naphthalene	91-20-3	BRL	0.333	mg/kg	11.07.19 15.01	U	20
Phenanthrene	85-01-8	**0.972**	0.0333	mg/kg	11.07.19 15.01		20
Pyrene	129-00-0	**1.41**	0.0333	mg/kg	11.07.19 15.01		20

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	88	%	31-130	11.07.19 15.01	
2-Fluorobiphenyl	98	%	51-133	11.07.19 15.01	
Terphenyl-D14	111	%	46-137	11.07.19 15.01	

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Sample Id: **D-B15-14.5-15.0** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-021 Date Collected: 11.01.19 15.00 Sample Depth: 14.5 - 15.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight

Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.06.19 13.03	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.8**	1.85	mg/kg	11.06.19 16.19		10
Barium	7440-39-3	**226**	3.70	mg/kg	11.06.19 16.19		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.06.19 16.19	U	10
Chromium	7440-47-3	**19.1**	3.70	mg/kg	11.06.19 16.19		10
Lead	7439-92-1	**13.0**	1.85	mg/kg	11.06.19 16.19		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.06.19 16.19	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.06.19 16.19	U	10

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B15-14.5-15.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-021	Date Collected:	11.01.19 15.00	Sample Depth:	14.5 - 15.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.09	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00198**	0.00166	mg/kg	11.07.19 19.29		1
Acenaphthylene	208-96-8	**0.0326**	0.00166	mg/kg	11.07.19 19.29		1
Anthracene	120-12-7	**0.0242**	0.00166	mg/kg	11.07.19 19.29		1
Benzo(a)anthracene	56-55-3	**0.0731**	0.00166	mg/kg	11.07.19 19.29		1
Benzo(a)pyrene	50-32-8	**0.112**	0.00166	mg/kg	11.07.19 19.29		1
Benzo(b)fluoranthene	205-99-2	**0.125**	0.00166	mg/kg	11.07.19 19.29		1
Benzo(g,h,i)perylene	191-24-2	**0.0892**	0.00166	mg/kg	11.07.19 19.29		1
Benzo(k)fluoranthene	207-08-9	**0.0398**	0.00166	mg/kg	11.07.19 19.29		1
Chrysene	218-01-9	**0.0856**	0.00166	mg/kg	11.07.19 19.29		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.07.19 19.29	U	1
Fluoranthene	206-44-0	**0.217**	0.00166	mg/kg	11.07.19 19.29		1
Fluorene	86-73-7	**0.0105**	0.00166	mg/kg	11.07.19 19.29		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0688**	0.00166	mg/kg	11.07.19 19.29		1
Naphthalene	91-20-3	**0.0210**	0.0166	mg/kg	11.07.19 19.29		1
Phenanthrene	85-01-8	**0.174**	0.00166	mg/kg	11.07.19 19.29		1
Pyrene	129-00-0	**0.255**	0.00166	mg/kg	11.07.19 19.29		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	112	%	31-130	11.07.19 19.29	
2-Fluorobiphenyl	114	%	51-133	11.07.19 19.29	
Terphenyl-D14	125	%	46-137	11.07.19 19.29	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-110119**
Lab Sample Id: 642000-022
Matrix: Soil
Date Collected: 11.01.19 08.00
Date Received:11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.00
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,1-Dichloroethane	75-34-3	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,1-Dichloroethene	75-35-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,1-Dichloropropene	563-58-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2-Dibromoethane	106-93-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2-Dichloroethane	107-06-2	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,2-Dichloropropane	78-87-5	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,3-Dichloropropane	142-28-9	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.250	mg/kg	11.05.19 15.26	U	50
2,2-Dichloropropane	594-20-7	BRL	0.250	mg/kg	11.05.19 15.26	U	50
2-Butanone	78-93-3	BRL	1.00	mg/kg	11.05.19 15.26	U	50
2-Chlorotoluene	95-49-8	BRL	0.250	mg/kg	11.05.19 15.26	U	50
2-Hexanone	591-78-6	BRL	2.50	mg/kg	11.05.19 15.26	U	50
4-Chlorotoluene	106-43-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.50	mg/kg	11.05.19 15.26	U	50
Acetone	67-64-1	BRL	5.00	mg/kg	11.05.19 15.26	U	50
Benzene	71-43-2	BRL	0.0500	mg/kg	11.05.19 15.26	U	50
Bromobenzene	108-86-1	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Bromochloromethane	74-97-5	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Bromodichloromethane	75-27-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Bromoform	75-25-2	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Bromomethane	74-83-9	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Carbon Disulfide	75-15-0	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Carbon Tetrachloride	56-23-5	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Chlorobenzene	108-90-7	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Chloroethane	75-00-3	BRL	0.500	mg/kg	11.05.19 15.26	U	50
Chloroform	67-66-3	BRL	0.250	mg/kg	11.05.19 15.26	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-110119**
Lab Sample Id: 642000-022

Matrix: Soil
Date Collected: 11.01.19 08.00

Date Received:11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.250	mg/kg	11.05.19 15.26	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.250	mg/kg	11.05.19 15.26	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Dibromochloromethane	124-48-1	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Dibromomethane	74-95-3	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Ethylbenzene	100-41-4	BRL	0.0500	mg/kg	11.05.19 15.26	U	50
Hexachlorobutadiene	87-68-3	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.00	mg/kg	11.05.19 15.26	U	50
Isopropylbenzene	98-82-8	BRL	0.250	mg/kg	11.05.19 15.26	U	50
m,p-Xylenes	179601-23-1	BRL	0.100	mg/kg	11.05.19 15.26	U	50
Methylene Chloride	75-09-2	BRL	1.00	mg/kg	11.05.19 15.26	U	50
MTBE	1634-04-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Naphthalene	91-20-3	BRL	0.500	mg/kg	11.05.19 15.26	U	50
n-Butylbenzene	104-51-8	BRL	0.250	mg/kg	11.05.19 15.26	U	50
n-Propylbenzene	103-65-1	BRL	0.250	mg/kg	11.05.19 15.26	U	50
o-Xylene	95-47-6	BRL	0.0500	mg/kg	11.05.19 15.26	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Sec-Butylbenzene	135-98-8	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Styrene	100-42-5	BRL	0.250	mg/kg	11.05.19 15.26	U	50
tert-Butylbenzene	98-06-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Tetrachloroethylene	127-18-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Toluene	108-88-3	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Total Xylenes	1330-20-7	BRL	0.0500	mg/kg	11.05.19 15.26	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.250	mg/kg	11.05.19 15.26	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Trichloroethene	79-01-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Trichlorofluoromethane	75-69-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Vinyl Acetate	108-05-4	BRL	0.500	mg/kg	11.05.19 15.26	U	50
Vinyl Chloride	75-01-4	BRL	0.250	mg/kg	11.05.19 15.26	U	50
1,3-Butadiene	106-99-0	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Cyclohexane	110-82-7	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Dicyclopentadiene	77-73-6	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Methylcyclohexane	108-87-2	BRL	0.500	mg/kg	11.05.19 15.26	U	50
n-Hexane	110-54-3	BRL	0.500	mg/kg	11.05.19 15.26	U	50
4-Ethyltoluene	622-96-8	BRL	0.250	mg/kg	11.05.19 15.26	U	50
Propene	115-07-1	BRL	0.250	mg/kg	11.05.19 15.26	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-110119**
Lab Sample Id: 642000-022

Matrix: Soil
Date Collected: 11.01.19 08.00

Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	86	%	53-142	11.05.19 15.26	
1,2-Dichloroethane-D4	100	%	56-150	11.05.19 15.26	
Toluene-D8	102	%	70-130	11.05.19 15.26	
4-Bromofluorobenzene	95	%	68-152	11.05.19 15.26	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B19-2.5-3.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-023 Date Collected: 11.01.19 15.40 Sample Depth: 2.5 - 3.0

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: 11.06.19 11.00 Basis: Wet Weight
Seq Number: 3106614 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0650	mg/kg	11.06.19 12.36	U	1

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	11.06.19 13.06	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight
Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.7**	1.85	mg/kg	11.06.19 16.28		10
Barium	7440-39-3	**116**	3.70	mg/kg	11.06.19 16.28		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.06.19 16.28	U	10
Chromium	7440-47-3	**9.86**	3.70	mg/kg	11.06.19 16.28		10
Lead	7439-92-1	**26.1**	1.85	mg/kg	11.06.19 16.28		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.06.19 16.28	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.06.19 16.28	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B19-2.5-3.0** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-023 Date Collected: 11.01.19 15.40 Sample Depth: 2.5 - 3.0

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3106624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.06.19 12.42		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3106597

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.06.19 13.30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3106588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.32**		SU	11.06.19 11.26		1
Temperature	TEMP	**25.0**		Deg C	11.06.19 11.26	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B19-2.5-3.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-023	Date Collected:	11.01.19 15.40	Sample Depth:	2.5 - 3.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.12	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.08.19 00.13	U	1
Acenaphthylene	208-96-8	**0.00681**	0.00166	mg/kg	11.08.19 00.13		1
Anthracene	120-12-7	**0.00472**	0.00166	mg/kg	11.08.19 00.13		1
Benzo(a)anthracene	56-55-3	**0.0224**	0.00166	mg/kg	11.08.19 00.13		1
Benzo(a)pyrene	50-32-8	**0.0450**	0.00166	mg/kg	11.08.19 00.13		1
Benzo(b)fluoranthene	205-99-2	**0.0611**	0.00166	mg/kg	11.08.19 00.13		1
Benzo(g,h,i)perylene	191-24-2	**0.0377**	0.00166	mg/kg	11.08.19 00.13		1
Benzo(k)fluoranthene	207-08-9	**0.0185**	0.00166	mg/kg	11.08.19 00.13		1
Chrysene	218-01-9	**0.0319**	0.00166	mg/kg	11.08.19 00.13		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.08.19 00.13	U	1
Fluoranthene	206-44-0	**0.0556**	0.00166	mg/kg	11.08.19 00.13		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.08.19 00.13	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0284**	0.00166	mg/kg	11.08.19 00.13		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.08.19 00.13	U	1
Phenanthrene	85-01-8	**0.0195**	0.00166	mg/kg	11.08.19 00.13		1
Pyrene	129-00-0	**0.0644**	0.00166	mg/kg	11.08.19 00.13		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	87	%	31-130	11.08.19 00.13	
2-Fluorobiphenyl	99	%	51-133	11.08.19 00.13	
Terphenyl-D14	114	%	46-137	11.08.19 00.13	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B19-2.5-3.0**
Lab Sample Id: 642000-023
Matrix: Soil
Date Collected: 11.01.19 15.40
Date Received: 11.05.19 10.00
Sample Depth: 2.5 - 3.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,1-Dichloroethane	75-34-3	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,1-Dichloroethene	75-35-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,1-Dichloropropene	563-58-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2-Dibromoethane	106-93-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2-Dichloroethane	107-06-2	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,2-Dichloropropane	78-87-5	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,3-Dichloropropane	142-28-9	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.262	mg/kg	11.05.19 18.40	U	50
2,2-Dichloropropane	594-20-7	BRL	0.262	mg/kg	11.05.19 18.40	U	50
2-Butanone	78-93-3	BRL	1.05	mg/kg	11.05.19 18.40	U	50
2-Chlorotoluene	95-49-8	BRL	0.262	mg/kg	11.05.19 18.40	U	50
2-Hexanone	591-78-6	BRL	2.62	mg/kg	11.05.19 18.40	U	50
4-Chlorotoluene	106-43-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.62	mg/kg	11.05.19 18.40	U	50
Acetone	67-64-1	BRL	5.24	mg/kg	11.05.19 18.40	U	50
Benzene	71-43-2	BRL	0.0524	mg/kg	11.05.19 18.40	U	50
Bromobenzene	108-86-1	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Bromochloromethane	74-97-5	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Bromodichloromethane	75-27-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Bromoform	75-25-2	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Bromomethane	74-83-9	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Carbon Disulfide	75-15-0	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Carbon Tetrachloride	56-23-5	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Chlorobenzene	108-90-7	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Chloroethane	75-00-3	BRL	0.524	mg/kg	11.05.19 18.40	U	50
Chloroform	67-66-3	BRL	0.262	mg/kg	11.05.19 18.40	U	50

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Sample Id: **D-B19-2.5-3.0**
Lab Sample Id: 642000-023
Matrix: Soil
Date Collected: 11.01.19 15.40
Date Received: 11.05.19 10.00
Sample Depth: 2.5 - 3.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.262	mg/kg	11.05.19 18.40	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.262	mg/kg	11.05.19 18.40	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Dibromochloromethane	124-48-1	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Dibromomethane	74-95-3	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Ethylbenzene	100-41-4	BRL	0.0524	mg/kg	11.05.19 18.40	U	50
Hexachlorobutadiene	87-68-3	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.05	mg/kg	11.05.19 18.40	U	50
Isopropylbenzene	98-82-8	BRL	0.262	mg/kg	11.05.19 18.40	U	50
m,p-Xylenes	179601-23-1	BRL	0.105	mg/kg	11.05.19 18.40	U	50
Methylene Chloride	75-09-2	BRL	1.05	mg/kg	11.05.19 18.40	U	50
MTBE	1634-04-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Naphthalene	91-20-3	BRL	0.524	mg/kg	11.05.19 18.40	U	50
n-Butylbenzene	104-51-8	BRL	0.262	mg/kg	11.05.19 18.40	U	50
n-Propylbenzene	103-65-1	BRL	0.262	mg/kg	11.05.19 18.40	U	50
o-Xylene	95-47-6	BRL	0.0524	mg/kg	11.05.19 18.40	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Sec-Butylbenzene	135-98-8	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Styrene	100-42-5	BRL	0.262	mg/kg	11.05.19 18.40	U	50
tert-Butylbenzene	98-06-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Tetrachloroethylene	127-18-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Toluene	108-88-3	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Total Xylenes	1330-20-7	BRL	0.0524	mg/kg	11.05.19 18.40	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.262	mg/kg	11.05.19 18.40	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Trichloroethene	79-01-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Trichlorofluoromethane	75-69-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Vinyl Acetate	108-05-4	BRL	0.524	mg/kg	11.05.19 18.40	U	50
Vinyl Chloride	75-01-4	BRL	0.262	mg/kg	11.05.19 18.40	U	50
1,3-Butadiene	106-99-0	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Cyclohexane	110-82-7	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Dicyclopentadiene	77-73-6	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Methylcyclohexane	108-87-2	BRL	0.524	mg/kg	11.05.19 18.40	U	50
n-Hexane	110-54-3	BRL	0.524	mg/kg	11.05.19 18.40	U	50
4-Ethyltoluene	622-96-8	BRL	0.262	mg/kg	11.05.19 18.40	U	50
Propene	115-07-1	BRL	0.262	mg/kg	11.05.19 18.40	U	50

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Sample Id: **D-B19-2.5-3.0**
Lab Sample Id: 642000-023

Matrix: Soil
Date Collected: 11.01.19 15.40

Date Received: 11.05.19 10.00
Sample Depth: 2.5 - 3.0

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	86	%	53-142	11.05.19 18.40	
1,2-Dichloroethane-D4	100	%	56-150	11.05.19 18.40	
Toluene-D8	102	%	70-130	11.05.19 18.40	
4-Bromofluorobenzene	96	%	68-152	11.05.19 18.40	

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Sample Id: **D-B19-5.0-5.5** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-024 Date Collected: 11.01.19 15.55 Sample Depth: 5.0 - 5.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight

Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.06.19 13.08	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.6**	1.69	mg/kg	11.06.19 16.31		10
Barium	7440-39-3	**937**	3.39	mg/kg	11.06.19 16.31		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.06.19 16.31	U	10
Chromium	7440-47-3	**12.0**	3.39	mg/kg	11.06.19 16.31		10
Lead	7439-92-1	**11.6**	1.69	mg/kg	11.06.19 16.31		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.06.19 16.31	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.06.19 16.31	U	10

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Sample Id:	**D-B19-5.0-5.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-024	Date Collected:	11.01.19 15.55	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.15	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 19.46	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 19.46	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 19.46	U	1
Benzo(a)anthracene	56-55-3	**0.00263**	0.00167	mg/kg	11.07.19 19.46		1
Benzo(a)pyrene	50-32-8	**0.00269**	0.00167	mg/kg	11.07.19 19.46		1
Benzo(b)fluoranthene	205-99-2	**0.00365**	0.00167	mg/kg	11.07.19 19.46		1
Benzo(g,h,i)perylene	191-24-2	**0.00175**	0.00167	mg/kg	11.07.19 19.46		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 19.46	U	1
Chrysene	218-01-9	**0.00286**	0.00167	mg/kg	11.07.19 19.46		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 19.46	U	1
Fluoranthene	206-44-0	**0.00517**	0.00167	mg/kg	11.07.19 19.46		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 19.46	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 19.46	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 19.46	U	1
Phenanthrene	85-01-8	**0.00287**	0.00167	mg/kg	11.07.19 19.46		1
Pyrene	129-00-0	**0.00536**	0.00167	mg/kg	11.07.19 19.46		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	109	%	31-130	11.07.19 19.46	
2-Fluorobiphenyl	115	%	51-133	11.07.19 19.46	
Terphenyl-D14	118	%	46-137	11.07.19 19.46	

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Sample Id: **D-B19-7.5-8.0** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-025 Date Collected: 11.01.19 16.05 Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight

Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0179	mg/kg	11.06.19 13.10	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.1**	1.92	mg/kg	11.06.19 16.34		10
Barium	7440-39-3	**121**	3.85	mg/kg	11.06.19 16.34		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.06.19 16.34	U	10
Chromium	7440-47-3	**9.72**	3.85	mg/kg	11.06.19 16.34		10
Lead	7439-92-1	**19.9**	1.92	mg/kg	11.06.19 16.34		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.06.19 16.34	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.06.19 16.34	U	10

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Sample Id:	**D-B19-7.5-8.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-025	Date Collected:	11.01.19 16.05	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.18	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.07.19 20.02	U	1
Acenaphthylene	208-96-8	**0.00822**	0.00166	mg/kg	11.07.19 20.02		1
Anthracene	120-12-7	**0.00564**	0.00166	mg/kg	11.07.19 20.02		1
Benzo(a)anthracene	56-55-3	**0.0227**	0.00166	mg/kg	11.07.19 20.02		1
Benzo(a)pyrene	50-32-8	**0.0420**	0.00166	mg/kg	11.07.19 20.02		1
Benzo(b)fluoranthene	205-99-2	**0.0504**	0.00166	mg/kg	11.07.19 20.02		1
Benzo(g,h,i)perylene	191-24-2	**0.0375**	0.00166	mg/kg	11.07.19 20.02		1
Benzo(k)fluoranthene	207-08-9	**0.0148**	0.00166	mg/kg	11.07.19 20.02		1
Chrysene	218-01-9	**0.0284**	0.00166	mg/kg	11.07.19 20.02		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.07.19 20.02	U	1
Fluoranthene	206-44-0	**0.0694**	0.00166	mg/kg	11.07.19 20.02		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.07.19 20.02	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0277**	0.00166	mg/kg	11.07.19 20.02		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.07.19 20.02	U	1
Phenanthrene	85-01-8	**0.0369**	0.00166	mg/kg	11.07.19 20.02		1
Pyrene	129-00-0	**0.0825**	0.00166	mg/kg	11.07.19 20.02		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	94	%	31-130	11.07.19 20.02	
2-Fluorobiphenyl	103	%	51-133	11.07.19 20.02	
Terphenyl-D14	123	%	46-137	11.07.19 20.02	

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APS MGP Douglas, AZ

Sample Id: **D-B19-10.0-10.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-026 Date Collected: 11.02.19 08.00 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	11.06.19 13.12	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight
Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.2**	1.92	mg/kg	11.06.19 16.37		10
Barium	7440-39-3	**138**	3.85	mg/kg	11.06.19 16.37		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.06.19 16.37	U	10
Chromium	7440-47-3	**16.9**	3.85	mg/kg	11.06.19 16.37		10
Lead	7439-92-1	**12.3**	1.92	mg/kg	11.06.19 16.37		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.06.19 16.37	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.06.19 16.37	U	10

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Sample Id:	**D-B19-10.0-10.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-026	Date Collected:	11.02.19 08.00	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.21	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 20.19	U	1
Acenaphthylene	208-96-8	**0.0208**	0.00167	mg/kg	11.07.19 20.19		1
Anthracene	120-12-7	**0.0149**	0.00167	mg/kg	11.07.19 20.19		1
Benzo(a)anthracene	56-55-3	**0.0583**	0.00167	mg/kg	11.07.19 20.19		1
Benzo(a)pyrene	50-32-8	**0.108**	0.00167	mg/kg	11.07.19 20.19		1
Benzo(b)fluoranthene	205-99-2	**0.126**	0.00167	mg/kg	11.07.19 20.19		1
Benzo(g,h,i)perylene	191-24-2	**0.0928**	0.00167	mg/kg	11.07.19 20.19		1
Benzo(k)fluoranthene	207-08-9	**0.0320**	0.00167	mg/kg	11.07.19 20.19		1
Chrysene	218-01-9	**0.0720**	0.00167	mg/kg	11.07.19 20.19		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 20.19	U	1
Fluoranthene	206-44-0	**0.184**	0.00167	mg/kg	11.07.19 20.19		1
Fluorene	86-73-7	**0.00526**	0.00167	mg/kg	11.07.19 20.19		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0684**	0.00167	mg/kg	11.07.19 20.19		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 20.19	U	1
Phenanthrene	85-01-8	**0.107**	0.00167	mg/kg	11.07.19 20.19		1
Pyrene	129-00-0	**0.226**	0.00167	mg/kg	11.07.19 20.19		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	98	%	31-130	11.07.19 20.19	
2-Fluorobiphenyl	102	%	51-133	11.07.19 20.19	
Terphenyl-D14	127	%	46-137	11.07.19 20.19	

APS, Phoenix, AZ

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Sample Id: **D-B19-15.0-15.5** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-027 Date Collected: 11.02.19 08.10 Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight

Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.189	mg/kg	11.06.19 13.14	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.4**	1.75	mg/kg	11.06.19 16.40		10
Barium	7440-39-3	**130**	3.51	mg/kg	11.06.19 16.40		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.06.19 16.40	U	10
Chromium	7440-47-3	**20.1**	3.51	mg/kg	11.06.19 16.40		10
Lead	7439-92-1	**9.79**	1.75	mg/kg	11.06.19 16.40		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.06.19 16.40	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.06.19 16.40	U	10

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Sample Id:	**D-B19-15.0-15.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-027	Date Collected:	11.02.19 08.10	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.24	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	**0.00303**	0.00167	mg/kg	11.07.19 20.36		1
Acenaphthylene	208-96-8	**0.0549**	0.00167	mg/kg	11.07.19 20.36		1
Anthracene	120-12-7	**0.0236**	0.00167	mg/kg	11.07.19 20.36		1
Benzo(a)anthracene	56-55-3	**0.0643**	0.00167	mg/kg	11.07.19 20.36		1
Benzo(a)pyrene	50-32-8	**0.0937**	0.00167	mg/kg	11.07.19 20.36		1
Benzo(b)fluoranthene	205-99-2	**0.110**	0.00167	mg/kg	11.07.19 20.36		1
Benzo(g,h,i)perylene	191-24-2	**0.0719**	0.00167	mg/kg	11.07.19 20.36		1
Benzo(k)fluoranthene	207-08-9	**0.0322**	0.00167	mg/kg	11.07.19 20.36		1
Chrysene	218-01-9	**0.0725**	0.00167	mg/kg	11.07.19 20.36		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 20.36	U	1
Fluoranthene	206-44-0	**0.213**	0.00167	mg/kg	11.07.19 20.36		1
Fluorene	86-73-7	**0.0247**	0.00167	mg/kg	11.07.19 20.36		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0547**	0.00167	mg/kg	11.07.19 20.36		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 20.36	U	1
Phenanthrene	85-01-8	**0.253**	0.00167	mg/kg	11.07.19 20.36		1
Pyrene	129-00-0	**0.257**	0.00167	mg/kg	11.07.19 20.36		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	107	%	31-130	11.07.19 20.36	
2-Fluorobiphenyl	113	%	51-133	11.07.19 20.36	
Terphenyl-D14	126	%	46-137	11.07.19 20.36	

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Sample Id: **D-B19-19.5-20.0**
Lab Sample Id: 642000-028
Matrix: Soil
Date Collected: 11.02.19 08.25
Date Received: 11.05.19 10.00
Sample Depth: 19.5 - 20.0

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106634
Date Prep: 11.06.19 08.05
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.06.19 13.16	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106630
Date Prep: 11.06.19 09.30
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.25**	1.69	mg/kg	11.06.19 16.43		10
Barium	7440-39-3	**246**	3.39	mg/kg	11.06.19 16.43		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.06.19 16.43	U	10
Chromium	7440-47-3	**27.7**	3.39	mg/kg	11.06.19 16.43		10
Lead	7439-92-1	**4.67**	1.69	mg/kg	11.06.19 16.43		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.06.19 16.43	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.06.19 16.43	U	10

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Sample Id:	**D-B19-19.5-20.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-028	Date Collected:	11.02.19 08.25	Sample Depth:	19.5 - 20.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.27	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 20.52	U	1
Acenaphthylene	208-96-8	**0.0243**	0.00167	mg/kg	11.07.19 20.52		1
Anthracene	120-12-7	**0.0151**	0.00167	mg/kg	11.07.19 20.52		1
Benzo(a)anthracene	56-55-3	**0.0550**	0.00167	mg/kg	11.07.19 20.52		1
Benzo(a)pyrene	50-32-8	**0.0947**	0.00167	mg/kg	11.07.19 20.52		1
Benzo(b)fluoranthene	205-99-2	**0.104**	0.00167	mg/kg	11.07.19 20.52		1
Benzo(g,h,i)perylene	191-24-2	**0.0802**	0.00167	mg/kg	11.07.19 20.52		1
Benzo(k)fluoranthene	207-08-9	**0.0357**	0.00167	mg/kg	11.07.19 20.52		1
Chrysene	218-01-9	**0.0666**	0.00167	mg/kg	11.07.19 20.52		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 20.52	U	1
Fluoranthene	206-44-0	**0.178**	0.00167	mg/kg	11.07.19 20.52		1
Fluorene	86-73-7	**0.00782**	0.00167	mg/kg	11.07.19 20.52		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0594**	0.00167	mg/kg	11.07.19 20.52		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 20.52	U	1
Phenanthrene	85-01-8	**0.131**	0.00167	mg/kg	11.07.19 20.52		1
Pyrene	129-00-0	**0.225**	0.00167	mg/kg	11.07.19 20.52		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	105	%	31-130	11.07.19 20.52	
2-Fluorobiphenyl	111	%	51-133	11.07.19 20.52	
Terphenyl-D14	128	%	46-137	11.07.19 20.52	

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Sample Id: **D-B20-7.5-8.0** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-029 Date Collected: 11.02.19 09.25 Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 09.05 Basis: Wet Weight

Seq Number: 3106613 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0304**	0.0179	mg/kg	11.06.19 13.53		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight

Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.99**	1.82	mg/kg	11.06.19 16.46		10
Barium	7440-39-3	**318**	3.64	mg/kg	11.06.19 16.46		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.06.19 16.46	U	10
Chromium	7440-47-3	**11.2**	3.64	mg/kg	11.06.19 16.46		10
Lead	7439-92-1	**29.9**	1.82	mg/kg	11.06.19 16.46		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.06.19 16.46	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.06.19 16.46	U	10

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Sample Id:	**D-B20-7.5-8.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-029	Date Collected:	11.02.19 09.25	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.30	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 00.30	U	1
Acenaphthylene	208-96-8	**0.00430**	0.00167	mg/kg	11.08.19 00.30		1
Anthracene	120-12-7	**0.00636**	0.00167	mg/kg	11.08.19 00.30		1
Benzo(a)anthracene	56-55-3	**0.0261**	0.00167	mg/kg	11.08.19 00.30		1
Benzo(a)pyrene	50-32-8	**0.0401**	0.00167	mg/kg	11.08.19 00.30		1
Benzo(b)fluoranthene	205-99-2	**0.0760**	0.00167	mg/kg	11.08.19 00.30		1
Benzo(g,h,i)perylene	191-24-2	**0.0245**	0.00167	mg/kg	11.08.19 00.30		1
Benzo(k)fluoranthene	207-08-9	**0.0181**	0.00167	mg/kg	11.08.19 00.30		1
Chrysene	218-01-9	**0.0370**	0.00167	mg/kg	11.08.19 00.30		1
Dibenz(a,h)Anthracene	53-70-3	**0.00541**	0.00167	mg/kg	11.08.19 00.30		1
Fluoranthene	206-44-0	**0.0599**	0.00167	mg/kg	11.08.19 00.30		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 00.30	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0218**	0.00167	mg/kg	11.08.19 00.30		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 00.30	U	1
Phenanthrene	85-01-8	**0.0190**	0.00167	mg/kg	11.08.19 00.30		1
Pyrene	129-00-0	**0.0552**	0.00167	mg/kg	11.08.19 00.30		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	70	%	31-130	11.08.19 00.30	
2-Fluorobiphenyl	81	%	51-133	11.08.19 00.30	
Terphenyl-D14	104	%	46-137	11.08.19 00.30	

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Sample Id: **D-B20-9.5-10.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-030 Date Collected: 11.02.19 09.30 Sample Depth: 9.5 - 10.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 09.05 Basis: Wet Weight
Seq Number: 3106613 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.06.19 14.29	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 09.30 Basis: Wet Weight
Seq Number: 3106630 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.4**	1.92	mg/kg	11.06.19 16.49		10
Barium	7440-39-3	**273**	3.85	mg/kg	11.06.19 16.49		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.06.19 16.49	U	10
Chromium	7440-47-3	**9.77**	3.85	mg/kg	11.06.19 16.49		10
Lead	7439-92-1	**19.9**	1.92	mg/kg	11.06.19 16.49		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.06.19 16.49	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.06.19 16.49	U	10

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Sample Id:	**D-B20-9.5-10.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-030	Date Collected:	11.02.19 09.30	Sample Depth:	9.5 - 10.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.33	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 21.09	U	1
Acenaphthylene	208-96-8	**0.00419**	0.00167	mg/kg	11.07.19 21.09		1
Anthracene	120-12-7	**0.00441**	0.00167	mg/kg	11.07.19 21.09		1
Benzo(a)anthracene	56-55-3	**0.0151**	0.00167	mg/kg	11.07.19 21.09		1
Benzo(a)pyrene	50-32-8	**0.0227**	0.00167	mg/kg	11.07.19 21.09		1
Benzo(b)fluoranthene	205-99-2	**0.0347**	0.00167	mg/kg	11.07.19 21.09		1
Benzo(g,h,i)perylene	191-24-2	**0.0171**	0.00167	mg/kg	11.07.19 21.09		1
Benzo(k)fluoranthene	207-08-9	**0.0107**	0.00167	mg/kg	11.07.19 21.09		1
Chrysene	218-01-9	**0.0203**	0.00167	mg/kg	11.07.19 21.09		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 21.09	U	1
Fluoranthene	206-44-0	**0.0390**	0.00167	mg/kg	11.07.19 21.09		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 21.09	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0142**	0.00167	mg/kg	11.07.19 21.09		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 21.09	U	1
Phenanthrene	85-01-8	**0.0243**	0.00167	mg/kg	11.07.19 21.09		1
Pyrene	129-00-0	**0.0413**	0.00167	mg/kg	11.07.19 21.09		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	80	%	31-130	11.07.19 21.09	
2-Fluorobiphenyl	90	%	51-133	11.07.19 21.09	
Terphenyl-D14	123	%	46-137	11.07.19 21.09	

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Sample Id: **D-B20-14.5-15.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-031 Date Collected: 11.02.19 09.45 Sample Depth: 14.5 - 15.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.06.19 13.31	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.7**	1.82	mg/kg	11.06.19 21.53		10
Barium	7440-39-3	**93.6**	3.64	mg/kg	11.06.19 21.53		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.06.19 21.53	U	10
Chromium	7440-47-3	**10.6**	3.64	mg/kg	11.06.19 21.53		10
Lead	7439-92-1	**9.25**	1.82	mg/kg	11.06.19 21.53		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.06.19 21.53	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.06.19 21.53	U	10

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Sample Id:	**D-B20-14.5-15.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-031	Date Collected:	11.02.19 09.45	Sample Depth:	14.5 - 15.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.36	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 21.26	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 21.26	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 21.26	U	1
Benzo(a)anthracene	56-55-3	**0.00539**	0.00167	mg/kg	11.07.19 21.26		1
Benzo(a)pyrene	50-32-8	**0.00886**	0.00167	mg/kg	11.07.19 21.26		1
Benzo(b)fluoranthene	205-99-2	**0.0144**	0.00167	mg/kg	11.07.19 21.26		1
Benzo(g,h,i)perylene	191-24-2	**0.00660**	0.00167	mg/kg	11.07.19 21.26		1
Benzo(k)fluoranthene	207-08-9	**0.00348**	0.00167	mg/kg	11.07.19 21.26		1
Chrysene	218-01-9	**0.00747**	0.00167	mg/kg	11.07.19 21.26		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 21.26	U	1
Fluoranthene	206-44-0	**0.0136**	0.00167	mg/kg	11.07.19 21.26		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 21.26	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00549**	0.00167	mg/kg	11.07.19 21.26		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 21.26	U	1
Phenanthrene	85-01-8	**0.00470**	0.00167	mg/kg	11.07.19 21.26		1
Pyrene	129-00-0	**0.0141**	0.00167	mg/kg	11.07.19 21.26		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	88	%	31-130	11.07.19 21.26	
2-Fluorobiphenyl	95	%	51-133	11.07.19 21.26	
Terphenyl-D14	115	%	46-137	11.07.19 21.26	

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Sample Id: **D-B20-19.5-20.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-032 Date Collected: 11.02.19 09.55 Sample Depth: 19.5 - 20.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0167	mg/kg	11.06.19 13.33	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.99**	1.92	mg/kg	11.06.19 21.56		10
Barium	7440-39-3	**36.9**	3.85	mg/kg	11.06.19 21.56		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.06.19 21.56	U	10
Chromium	7440-47-3	**18.7**	3.85	mg/kg	11.06.19 21.56		10
Lead	7439-92-1	**5.25**	1.92	mg/kg	11.06.19 21.56		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.06.19 21.56	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.06.19 21.56	U	10

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Sample Id:	**D-B20-19.5-20.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-032	Date Collected:	11.02.19 09.55	Sample Depth:	19.5 - 20.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.39	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 21.42	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 21.42	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 21.42	U	1
Benzo(a)anthracene	56-55-3	**0.00227**	0.00167	mg/kg	11.07.19 21.42		1
Benzo(a)pyrene	50-32-8	**0.00367**	0.00167	mg/kg	11.07.19 21.42		1
Benzo(b)fluoranthene	205-99-2	**0.00577**	0.00167	mg/kg	11.07.19 21.42		1
Benzo(g,h,i)perylene	191-24-2	**0.00299**	0.00167	mg/kg	11.07.19 21.42		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 21.42	U	1
Chrysene	218-01-9	**0.00286**	0.00167	mg/kg	11.07.19 21.42		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 21.42	U	1
Fluoranthene	206-44-0	**0.00609**	0.00167	mg/kg	11.07.19 21.42		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 21.42	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00233**	0.00167	mg/kg	11.07.19 21.42		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 21.42	U	1
Phenanthrene	85-01-8	**0.00245**	0.00167	mg/kg	11.07.19 21.42		1
Pyrene	129-00-0	**0.00665**	0.00167	mg/kg	11.07.19 21.42		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	103	%	31-130	11.07.19 21.42	
2-Fluorobiphenyl	107	%	51-133	11.07.19 21.42	
Terphenyl-D14	124	%	46-137	11.07.19 21.42	

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APS MGP Douglas, AZ

Sample Id: **D-TAR-01**
Lab Sample Id: 642000-033
Matrix: Soil
Date Collected: 11.02.19 08.00
Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5030B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,1-Dichloroethane	75-34-3	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,1-Dichloroethene	75-35-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,1-Dichloropropene	563-58-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2-Dibromoethane	106-93-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2-Dichloroethane	107-06-2	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,2-Dichloropropane	78-87-5	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,3-Dichloropropane	142-28-9	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.502	mg/kg	11.05.19 19.02	U	50
2,2-Dichloropropane	594-20-7	BRL	0.502	mg/kg	11.05.19 19.02	U	50
2-Butanone	78-93-3	BRL	2.01	mg/kg	11.05.19 19.02	U	50
2-Chlorotoluene	95-49-8	BRL	0.502	mg/kg	11.05.19 19.02	U	50
2-Hexanone	591-78-6	BRL	5.02	mg/kg	11.05.19 19.02	U	50
4-Chlorotoluene	106-43-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	5.02	mg/kg	11.05.19 19.02	U	50
Acetone	67-64-1	BRL	10.0	mg/kg	11.05.19 19.02	U	50
Benzene	71-43-2	BRL	0.100	mg/kg	11.05.19 19.02	U	50
Bromobenzene	108-86-1	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Bromochloromethane	74-97-5	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Bromodichloromethane	75-27-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Bromoform	75-25-2	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Bromomethane	74-83-9	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Carbon Disulfide	75-15-0	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Carbon Tetrachloride	56-23-5	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Chlorobenzene	108-90-7	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Chloroethane	75-00-3	BRL	1.00	mg/kg	11.05.19 19.02	U	50
Chloroform	67-66-3	BRL	0.502	mg/kg	11.05.19 19.02	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TAR-01**
Lab Sample Id: 642000-033
Matrix: Soil
Date Collected: 11.02.19 08.00
Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.30
Prep Method: SW5030B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.502	mg/kg	11.05.19 19.02	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.502	mg/kg	11.05.19 19.02	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Dibromochloromethane	124-48-1	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Dibromomethane	74-95-3	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Ethylbenzene	100-41-4	BRL	0.100	mg/kg	11.05.19 19.02	U	50
Hexachlorobutadiene	87-68-3	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	2.01	mg/kg	11.05.19 19.02	U	50
Isopropylbenzene	98-82-8	BRL	0.502	mg/kg	11.05.19 19.02	U	50
m,p-Xylenes	179601-23-1	BRL	0.201	mg/kg	11.05.19 19.02	U	50
Methylene Chloride	75-09-2	BRL	2.01	mg/kg	11.05.19 19.02	U	50
MTBE	1634-04-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Naphthalene	91-20-3	BRL	1.00	mg/kg	11.05.19 19.02	U	50
n-Butylbenzene	104-51-8	BRL	0.502	mg/kg	11.05.19 19.02	U	50
n-Propylbenzene	103-65-1	BRL	0.502	mg/kg	11.05.19 19.02	U	50
o-Xylene	95-47-6	BRL	0.100	mg/kg	11.05.19 19.02	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Sec-Butylbenzene	135-98-8	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Styrene	100-42-5	BRL	0.502	mg/kg	11.05.19 19.02	U	50
tert-Butylbenzene	98-06-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Tetrachloroethylene	127-18-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Toluene	108-88-3	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Total Xylenes	1330-20-7	BRL	0.100	mg/kg	11.05.19 19.02	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.502	mg/kg	11.05.19 19.02	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Trichloroethene	79-01-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Trichlorofluoromethane	75-69-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Vinyl Acetate	108-05-4	BRL	1.00	mg/kg	11.05.19 19.02	U	50
Vinyl Chloride	75-01-4	BRL	0.502	mg/kg	11.05.19 19.02	U	50
1,3-Butadiene	106-99-0	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Cyclohexane	110-82-7	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Dicyclopentadiene	77-73-6	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Methylcyclohexane	108-87-2	BRL	1.00	mg/kg	11.05.19 19.02	U	50
n-Hexane	110-54-3	BRL	1.00	mg/kg	11.05.19 19.02	U	50
4-Ethyltoluene	622-96-8	BRL	0.502	mg/kg	11.05.19 19.02	U	50
Propene	115-07-1	BRL	0.502	mg/kg	11.05.19 19.02	U	50

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APS MGP Douglas, AZ

Sample Id: **D-TAR-01**
Lab Sample Id: 642000-033

Matrix: Soil
Date Collected: 11.02.19 08.00

Date Received:11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.30

Prep Method: SW5030B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	84	%	53-142	11.05.19 19.02	
1,2-Dichloroethane-D4	100	%	56-150	11.05.19 19.02	
Toluene-D8	102	%	70-130	11.05.19 19.02	
4-Bromofluorobenzene	94	%	68-152	11.05.19 19.02	

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Sample Id: **D-TAR-01**
Matrix: Soil
Date Received:11.05.19 10.00
Lab Sample Id: 642000-033
Date Collected: 11.02.19 08.00

Analytical Method: TCLP Mercury by SW-846 1311/7470A
Prep Method: SW7470P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.07.19 11.30
Seq Number: 3106790

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.000200	mg/L	11.07.19 15.32	U	1

Analytical Method: TCLP Metals per ICP/MS by EPA 6020
Prep Method: SW3010A
Tech: MLI
% Moisture:
Analyst: DEP
Date Prep: 11.06.19 10.30
Seq Number: 3106707
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	BRL	0.0200	mg/L	11.06.19 20.02	U	1
Barium	7440-39-3	**1.35**	0.0200	mg/L	11.06.19 20.02		1
Cadmium	7440-43-9	BRL	0.0100	mg/L	11.06.19 20.02	U	1
Chromium	7440-47-3	BRL	0.0200	mg/L	11.06.19 20.02	U	1
Lead	7439-92-1	BRL	0.0100	mg/L	11.06.19 20.02	U	1
Selenium	7782-49-2	BRL	0.0100	mg/L	11.06.19 20.02	U	1
Silver	7440-22-4	BRL	0.0100	mg/L	11.06.19 20.02	U	1

Certificate of Analytical Results 642000

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Sample Id: **D-TAR-01**
Lab Sample Id: 642000-033

Matrix: Soil
Date Collected: 11.02.19 08.00

Date Received:11.05.19 10.00

Analytical Method: TCLP VOCs by SW-846 8260C
Tech: CRL
Analyst: SAD
Seq Number: 3106619

Prep Method: SW5030B
% Moisture:

Date Prep: 11.06.19 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	BRL	0.0500	mg/L	11.06.19 16.58	U	50
Methyl ethyl ketone	78-93-3	BRL	2.50	mg/L	11.06.19 16.58	U	50
Carbon Tetrachloride	56-23-5	BRL	0.250	mg/L	11.06.19 16.58	U	50
Chlorobenzene	108-90-7	BRL	0.0500	mg/L	11.06.19 16.58	U	50
Chloroform	67-66-3	BRL	0.0500	mg/L	11.06.19 16.58	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.0500	mg/L	11.06.19 16.58	U	50
1,2-Dichloroethane	107-06-2	BRL	0.0500	mg/L	11.06.19 16.58	U	50
1,1-Dichloroethene	75-35-4	BRL	0.0500	mg/L	11.06.19 16.58	U	50
Tetrachloroethylene	127-18-4	BRL	0.0500	mg/L	11.06.19 16.58	U	50
Trichloroethylene	79-01-6	BRL	0.250	mg/L	11.06.19 16.58	U	50
Vinyl Chloride	75-01-4	BRL	0.100	mg/L	11.06.19 16.58	U	50

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	91	%	75-131	11.06.19 16.58	
1,2-Dichloroethane-D4	100	%	63-144	11.06.19 16.58	
Toluene-D8	90	%	80-117	11.06.19 16.58	
4-Bromofluorobenzene	99	%	74-124	11.06.19 16.58	

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Sample Id: **D-B26-40.0-40.5**
Lab Sample Id: 642000-034
Matrix: Soil
Date Collected: 11.02.19 14.30
Date Received: 11.05.19 10.00
Sample Depth: 40.0 - 40.5

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106745
Date Prep: 11.06.19 15.42
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 21.59	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 21.59	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 21.59	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	112	%	31-130	11.07.19 21.59	
2-Fluorobiphenyl	116	%	51-133	11.07.19 21.59	
Terphenyl-D14	125	%	46-137	11.07.19 21.59	

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Sample Id: **D-B27-2.5-3.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-035 Date Collected: 11.03.19 10.00 Sample Depth: 2.5 - 3.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	11.06.19 13.35	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.4**	2.00	mg/kg	11.06.19 21.59		10
Barium	7440-39-3	**426**	4.00	mg/kg	11.06.19 21.59		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.06.19 21.59	U	10
Chromium	7440-47-3	**8.79**	4.00	mg/kg	11.06.19 21.59		10
Lead	7439-92-1	**11.8**	2.00	mg/kg	11.06.19 21.59		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.06.19 21.59	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.06.19 21.59	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B27-2.5-3.0**
Lab Sample Id: 642000-035
Matrix: Soil
Date Collected: 11.03.19 10.00
Date Received: 11.05.19 10.00
Sample Depth: 2.5 - 3.0

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106745
Date Prep: 11.06.19 15.45
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 22.16	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 22.16	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 22.16	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	82	%	31-130	11.07.19 22.16	
2-Fluorobiphenyl	114	%	51-133	11.07.19 22.16	
Terphenyl-D14	121	%	46-137	11.07.19 22.16	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B27-5.0-5.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-036 Date Collected: 11.03.19 10.10 Sample Depth: 5.0 - 5.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.06.19 13.36	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**24.1**	1.67	mg/kg	11.06.19 22.01		10
Barium	7440-39-3	**151**	3.33	mg/kg	11.06.19 22.01		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.06.19 22.01	U	10
Chromium	7440-47-3	**11.8**	3.33	mg/kg	11.06.19 22.01		10
Lead	7439-92-1	**12.0**	1.67	mg/kg	11.06.19 22.01		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.06.19 22.01	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.06.19 22.01	U	10

Certificate of Analytical Results 642000

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Sample Id:	**D-B27-5.0-5.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-036	Date Collected:	11.03.19 10.10	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.48	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 22.33	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 22.33	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 22.33	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	119	%	31-130	11.07.19 22.33	
2-Fluorobiphenyl	125	%	51-133	11.07.19 22.33	
Terphenyl-D14	127	%	46-137	11.07.19 22.33	

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APS MGP Douglas, AZ

Sample Id: **D-FD01-110319** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-037 Date Collected: 11.03.19 10.05

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight

Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.06.19 13.38	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight

Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.8**	1.79	mg/kg	11.06.19 22.04		10
Barium	7440-39-3	**142**	3.57	mg/kg	11.06.19 22.04		10
Cadmium	7440-43-9	BRL	1.79	mg/kg	11.06.19 22.04	U	10
Chromium	7440-47-3	**9.14**	3.57	mg/kg	11.06.19 22.04		10
Lead	7439-92-1	**12.2**	1.79	mg/kg	11.06.19 22.04		10
Selenium	7782-49-2	BRL	1.79	mg/kg	11.06.19 22.04	U	10
Silver	7440-22-4	BRL	1.79	mg/kg	11.06.19 22.04	U	10

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Sample Id: **D-FD01-110319**
Lab Sample Id: 642000-037
Matrix: Soil
Date Collected: 11.03.19 10.05
Date Received: 11.05.19 10.00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106745
Date Prep: 11.06.19 15.51
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.07.19 22.49	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.07.19 22.49	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.07.19 22.49	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	109	%	31-130	11.07.19 22.49	
2-Fluorobiphenyl	117	%	51-133	11.07.19 22.49	
Terphenyl-D14	123	%	46-137	11.07.19 22.49	

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Sample Id: **D-B27-7.5-8.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-038 Date Collected: 11.03.19 15.15 Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.06.19 13.44	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.2**	1.69	mg/kg	11.06.19 22.07		10
Barium	7440-39-3	**171**	3.39	mg/kg	11.06.19 22.07		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.06.19 22.07	U	10
Chromium	7440-47-3	**10.3**	3.39	mg/kg	11.06.19 22.07		10
Lead	7439-92-1	**12.3**	1.69	mg/kg	11.06.19 22.07		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.06.19 22.07	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.06.19 22.07	U	10

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Sample Id:	**D-B27-7.5-8.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-038	Date Collected:	11.03.19 15.15	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.54	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Benzo(b)fluoranthene	205-99-2	**0.00184**	0.00167	mg/kg	11.07.19 23.06		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 23.06	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 23.06	U	1
Pyrene	129-00-0	**0.00187**	0.00167	mg/kg	11.07.19 23.06		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	124	%	31-130	11.07.19 23.06	
2-Fluorobiphenyl	127	%	51-133	11.07.19 23.06	
Terphenyl-D14	127	%	46-137	11.07.19 23.06	

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Sample Id: **D-B27-10.0-10.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-039 Date Collected: 11.03.19 15.35 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 07.40 Basis: Wet Weight
Seq Number: 3106627 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.06.19 11.23	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.7**	1.75	mg/kg	11.06.19 22.10		10
Barium	7440-39-3	**84.7**	3.51	mg/kg	11.06.19 22.10		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.06.19 22.10	U	10
Chromium	7440-47-3	**16.5**	3.51	mg/kg	11.06.19 22.10		10
Lead	7439-92-1	**11.1**	1.75	mg/kg	11.06.19 22.10		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.06.19 22.10	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.06.19 22.10	U	10

Analytical Method: FOC By ASTM D2974
Tech: YAV % Moisture:
Analyst: YAV Basis: Wet Weight
Seq Number: 3106776

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**1.50**	0.0100	%	11.07.19 15.07	+	1

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Sample Id:	**D-B27-10.0-10.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-039	Date Collected:	11.03.19 15.35	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 15.57	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.19 22.34	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.06.19 22.34	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.06.19 22.34	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	116	%	31-130	11.06.19 22.34	
2-Fluorobiphenyl	118	%	51-133	11.06.19 22.34	
Terphenyl-D14	125	%	46-137	11.06.19 22.34	

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Sample Id: **D-B27-15.0-15.5**
Lab Sample Id: 642000-040
Matrix: Soil
Date Collected: 11.03.19 15.55
Date Received: 11.05.19 10.00
Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106634
Date Prep: 11.06.19 08.05
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.06.19 13.46	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106705
Date Prep: 11.06.19 10.55
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.6**	1.92	mg/kg	11.06.19 22.31		10
Barium	7440-39-3	**149**	3.85	mg/kg	11.06.19 22.31		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.06.19 22.31	U	10
Chromium	7440-47-3	**14.0**	3.85	mg/kg	11.06.19 22.31		10
Lead	7439-92-1	**13.0**	1.92	mg/kg	11.06.19 22.31		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.06.19 22.31	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.06.19 22.31	U	10

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Sample Id: **D-B27-15.0-15.5**
Lab Sample Id: 642000-040

Matrix: Soil
Date Collected: 11.03.19 15.55

Date Received: 11.05.19 10.00
Sample Depth: 15.0 - 15.5

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106745

Date Prep: 11.06.19 16.06

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 23.23	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 23.23	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 23.23	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	117	%	31-130	11.07.19 23.23	
2-Fluorobiphenyl	123	%	51-133	11.07.19 23.23	
Terphenyl-D14	124	%	46-137	11.07.19 23.23	

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Sample Id: **D-B27-20.0-20.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-041 Date Collected: 11.03.19 16.20 Sample Depth: 20.0 - 20.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.06.19 13.04	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.2**	1.92	mg/kg	11.06.19 22.34		10
Barium	7440-39-3	**202**	3.85	mg/kg	11.06.19 22.34		10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.06.19 22.34	U	10
Chromium	7440-47-3	**5.12**	3.85	mg/kg	11.06.19 22.34		10
Lead	7439-92-1	**17.0**	1.92	mg/kg	11.06.19 22.34		10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.06.19 22.34	U	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.06.19 22.34	U	10

Analytical Method: FOC By ASTM D2974
Tech: YAV % Moisture:
Analyst: YAV Basis: Wet Weight
Seq Number: 3106776

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**0.800**	0.0100	%	11.07.19 15.07	+	1

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Sample Id: **D-B27-20.0-20.5**
Lab Sample Id: 642000-041
Matrix: Soil
Date Collected: 11.03.19 16.20
Date Received: 11.05.19 10.00
Sample Depth: 20.0 - 20.5

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106745
Date Prep: 11.06.19 16.09
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.07.19 23.40	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.07.19 23.40	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.07.19 23.40	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	118	%	31-130	11.07.19 23.40	
2-Fluorobiphenyl	121	%	51-133	11.07.19 23.40	
Terphenyl-D14	123	%	46-137	11.07.19 23.40	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B27-25.0-25.5**
Lab Sample Id: 642000-042
Matrix: Soil
Date Collected: 11.03.19 16.30
Date Received: 11.05.19 10.00
Sample Depth: 25.0 - 25.5

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106613
Date Prep: 11.06.19 09.05
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.06.19 14.08	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106705
Date Prep: 11.06.19 10.55
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.1**	1.72	mg/kg	11.06.19 22.37		10
Barium	7440-39-3	**41.6**	3.45	mg/kg	11.06.19 22.37		10
Cadmium	7440-43-9	BRL	1.72	mg/kg	11.06.19 22.37	U	10
Chromium	7440-47-3	**6.93**	3.45	mg/kg	11.06.19 22.37		10
Lead	7439-92-1	**12.2**	1.72	mg/kg	11.06.19 22.37		10
Selenium	7782-49-2	BRL	1.72	mg/kg	11.06.19 22.37	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	11.06.19 22.37	U	10

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Sample Id:	**D-B27-25.0-25.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-042	Date Collected:	11.03.19 16.30	Sample Depth:	25.0 - 25.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 16.12	Basis:	Wet Weight
Seq Number:	3106745			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 23.56	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 23.56	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 23.56	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	118	%	31-130	11.07.19 23.56	
2-Fluorobiphenyl	122	%	51-133	11.07.19 23.56	
Terphenyl-D14	121	%	46-137	11.07.19 23.56	

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Sample Id: **D-FD02-110319** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-043 Date Collected: 11.03.19 16.35

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 09.05 Basis: Wet Weight

Seq Number: 3106613 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0179	mg/kg	11.06.19 14.10	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight

Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.1**	1.89	mg/kg	11.06.19 22.40		10
Barium	7440-39-3	**42.7**	3.77	mg/kg	11.06.19 22.40		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.06.19 22.40	U	10
Chromium	7440-47-3	**7.93**	3.77	mg/kg	11.06.19 22.40		10
Lead	7439-92-1	**11.9**	1.89	mg/kg	11.06.19 22.40		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.06.19 22.40	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.06.19 22.40	U	10

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Sample Id: **D-FD02-110319**
Lab Sample Id: 642000-043
Matrix: Soil
Date Collected: 11.03.19 16.35
Date Received:11.05.19 10.00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710
Date Prep: 11.06.19 09.09
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Benzo(a)pyrene	50-32-8	**0.00198**	0.00167	mg/kg	11.07.19 00.15		1
Benzo(b)fluoranthene	205-99-2	**0.00204**	0.00167	mg/kg	11.07.19 00.15		1
Benzo(g,h,i)perylene	191-24-2	**0.00264**	0.00167	mg/kg	11.07.19 00.15		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Fluoranthene	206-44-0	**0.00218**	0.00167	mg/kg	11.07.19 00.15		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00178**	0.00167	mg/kg	11.07.19 00.15		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 00.15	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 00.15	U	1
Pyrene	129-00-0	**0.00250**	0.00167	mg/kg	11.07.19 00.15		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	106	%	31-130	11.07.19 00.15	
2-Fluorobiphenyl	114	%	51-133	11.07.19 00.15	
Terphenyl-D14	133	%	46-137	11.07.19 00.15	

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Sample Id: **D-B26-2.5-3.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-044 Date Collected: 11.01.19 14.15 Sample Depth: 2.5 - 3.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 09.05 Basis: Wet Weight
Seq Number: 3106613 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.06.19 14.12	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.7**	1.79	mg/kg	11.06.19 22.43		10
Barium	7440-39-3	**112**	3.57	mg/kg	11.06.19 22.43		10
Cadmium	7440-43-9	BRL	1.79	mg/kg	11.06.19 22.43	U	10
Chromium	7440-47-3	**11.8**	3.57	mg/kg	11.06.19 22.43		10
Lead	7439-92-1	**9.72**	1.79	mg/kg	11.06.19 22.43		10
Selenium	7782-49-2	BRL	1.79	mg/kg	11.06.19 22.43	U	10
Silver	7440-22-4	BRL	1.79	mg/kg	11.06.19 22.43	U	10

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Sample Id: **D-B26-2.5-3.0**
Lab Sample Id: 642000-044
Matrix: Soil
Date Collected: 11.01.19 14.15
Date Received: 11.05.19 10.00
Sample Depth: 2.5 - 3.0

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710
Date Prep: 11.06.19 09.12
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 00.32	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 00.32	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 00.32	U	1
Benzo(a)anthracene	56-55-3	**0.00264**	0.00167	mg/kg	11.07.19 00.32		1
Benzo(a)pyrene	50-32-8	**0.00395**	0.00167	mg/kg	11.07.19 00.32		1
Benzo(b)fluoranthene	205-99-2	**0.00455**	0.00167	mg/kg	11.07.19 00.32		1
Benzo(g,h,i)perylene	191-24-2	**0.00507**	0.00167	mg/kg	11.07.19 00.32		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 00.32	U	1
Chrysene	218-01-9	**0.00307**	0.00167	mg/kg	11.07.19 00.32		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 00.32	U	1
Fluoranthene	206-44-0	**0.00860**	0.00167	mg/kg	11.07.19 00.32		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 00.32	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00350**	0.00167	mg/kg	11.07.19 00.32		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 00.32	U	1
Phenanthrene	85-01-8	**0.00604**	0.00167	mg/kg	11.07.19 00.32		1
Pyrene	129-00-0	**0.0101**	0.00167	mg/kg	11.07.19 00.32		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	77	%	31-130	11.07.19 00.32	
2-Fluorobiphenyl	85	%	51-133	11.07.19 00.32	
Terphenyl-D14	125	%	46-137	11.07.19 00.32	

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Sample Id: **D-FD05-110119** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-045 Date Collected: 11.01.19 14.20

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 09.05 Basis: Wet Weight

Seq Number: 3106613 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.06.19 14.14	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight

Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.4**	1.69	mg/kg	11.06.19 22.46		10
Barium	7440-39-3	**130**	3.39	mg/kg	11.06.19 22.46		10
Cadmium	7440-43-9	BRL	1.69	mg/kg	11.06.19 22.46	U	10
Chromium	7440-47-3	**11.7**	3.39	mg/kg	11.06.19 22.46		10
Lead	7439-92-1	**11.2**	1.69	mg/kg	11.06.19 22.46		10
Selenium	7782-49-2	BRL	1.69	mg/kg	11.06.19 22.46	U	10
Silver	7440-22-4	BRL	1.69	mg/kg	11.06.19 22.46	U	10

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Sample Id: **D-FD05-110119**
Lab Sample Id: 642000-045

Matrix: Soil
Date Collected: 11.01.19 14.20

Date Received:11.05.19 10.00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710

Date Prep: 11.06.19 09.15

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 00.49	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 00.49	U	1
Pyrene	129-00-0	**0.00410**	0.00167	mg/kg	11.07.19 00.49		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	98	%	31-130	11.07.19 00.49	
2-Fluorobiphenyl	106	%	51-133	11.07.19 00.49	
Terphenyl-D14	130	%	46-137	11.07.19 00.49	

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Sample Id: **D-B26-5.0-5.5**
Lab Sample Id: 642000-046
Matrix: Soil
Date Collected: 11.01.19 14.30
Date Received: 11.05.19 10.00
Sample Depth: 5.0 - 5.5

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106634
Date Prep: 11.06.19 08.05
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.06.19 12.48	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106705
Date Prep: 11.06.19 10.55
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.2**	1.67	mg/kg	11.06.19 22.55		10
Barium	7440-39-3	**81.2**	3.33	mg/kg	11.06.19 22.55		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.06.19 22.55	U	10
Chromium	7440-47-3	**9.13**	3.33	mg/kg	11.06.19 22.55		10
Lead	7439-92-1	**9.02**	1.67	mg/kg	11.06.19 22.55		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.06.19 22.55	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.06.19 22.55	U	10

Analytical Method: FOC By ASTM D2974
Tech: YAV
Analyst: YAV
Seq Number: 3106776
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**1.50**	0.0100	%	11.07.19 15.07	+	1

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Sample Id:	**D-B26-5.0-5.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-046	Date Collected:	11.01.19 14.30	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 09.18	Basis:	Wet Weight
Seq Number:	3106710			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.06.19 23.24	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.06.19 23.24	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.06.19 23.24	U	1
Benzo(a)anthracene	56-55-3	**0.00177**	0.00167	mg/kg	11.06.19 23.24		1
Benzo(a)pyrene	50-32-8	**0.00299**	0.00167	mg/kg	11.06.19 23.24		1
Benzo(b)fluoranthene	205-99-2	**0.00400**	0.00167	mg/kg	11.06.19 23.24		1
Benzo(g,h,i)perylene	191-24-2	**0.00464**	0.00167	mg/kg	11.06.19 23.24		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.06.19 23.24	U	1
Chrysene	218-01-9	**0.00231**	0.00167	mg/kg	11.06.19 23.24		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.06.19 23.24	U	1
Fluoranthene	206-44-0	**0.00726**	0.00167	mg/kg	11.06.19 23.24		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.06.19 23.24	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00299**	0.00167	mg/kg	11.06.19 23.24		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.06.19 23.24	U	1
Phenanthrene	85-01-8	**0.00574**	0.00167	mg/kg	11.06.19 23.24		1
Pyrene	129-00-0	**0.00841**	0.00167	mg/kg	11.06.19 23.24		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	119	%	31-130	11.06.19 23.24	
2-Fluorobiphenyl	128	%	51-133	11.06.19 23.24	
Terphenyl-D14	132	%	46-137	11.06.19 23.24	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-7.5-8.0** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-047 Date Collected: 11.02.19 09.50 Sample Depth: 7.5 - 8.0

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 09.05 Basis: Wet Weight
Seq Number: 3106613 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.06.19 14.16	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**21.6**	1.82	mg/kg	11.06.19 23.07		10
Barium	7440-39-3	**96.3**	3.64	mg/kg	11.06.19 23.07		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.06.19 23.07	U	10
Chromium	7440-47-3	**7.89**	3.64	mg/kg	11.06.19 23.07		10
Lead	7439-92-1	**14.1**	1.82	mg/kg	11.06.19 23.07		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.06.19 23.07	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.06.19 23.07	U	10

Analytical Method: FOC By ASTM D2974
Tech: YAV % Moisture:
Analyst: YAV Basis: Wet Weight
Seq Number: 3106776

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**1.70**	0.0100	%	11.07.19 15.07	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B26-7.5-8.0**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-047	Date Collected:	11.02.19 09.50	Sample Depth:	7.5 - 8.0
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 09.27	Basis:	Wet Weight
Seq Number:	3106710			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 01.06	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 01.06	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 01.06	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	120	%	31-130	11.07.19 01.06	
2-Fluorobiphenyl	124	%	51-133	11.07.19 01.06	
Terphenyl-D14	130	%	46-137	11.07.19 01.06	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-10.0-10.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-048 Date Collected: 11.02.19 10.15 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 08.05 Basis: Wet Weight
Seq Number: 3106634 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.06.19 13.21	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**17.3**	1.75	mg/kg	11.06.19 23.10		10
Barium	7440-39-3	**241**	3.51	mg/kg	11.06.19 23.10		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.06.19 23.10	U	10
Chromium	7440-47-3	**8.54**	3.51	mg/kg	11.06.19 23.10		10
Lead	7439-92-1	**17.4**	1.75	mg/kg	11.06.19 23.10		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.06.19 23.10	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.06.19 23.10	U	10

Analytical Method: FOC By ASTM D2974
Tech: YAV % Moisture:
Analyst: YAV Basis: Wet Weight
Seq Number: 3106776

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**1.00**	0.0100	%	11.07.19 15.07	+	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B26-10.0-10.5**	Matrix:	Soil	Date Received:	11.05.19 10.00
Lab Sample Id:	642000-048	Date Collected:	11.02.19 10.15	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	DRU			% Moisture:	
Analyst:	DNE	Date Prep:	11.06.19 09.30	Basis:	Wet Weight
Seq Number:	3106710			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00834	mg/kg	11.07.19 10.52	U	5
Acenaphthylene	208-96-8	BRL	0.00834	mg/kg	11.07.19 10.52	U	5
Anthracene	120-12-7	BRL	0.00834	mg/kg	11.07.19 10.52	U	5
Benzo(a)anthracene	56-55-3	BRL	0.00834	mg/kg	11.07.19 10.52	U	5
Benzo(a)pyrene	50-32-8	**0.0107**	0.00834	mg/kg	11.07.19 10.52		5
Benzo(b)fluoranthene	205-99-2	**0.0163**	0.00834	mg/kg	11.07.19 10.52		5
Benzo(g,h,i)perylene	191-24-2	**0.0157**	0.00834	mg/kg	11.07.19 10.52		5
Benzo(k)fluoranthene	207-08-9	BRL	0.00834	mg/kg	11.07.19 10.52	U	5
Chrysene	218-01-9	**0.00933**	0.00834	mg/kg	11.07.19 10.52		5
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00834	mg/kg	11.07.19 10.52	U	5
Fluoranthene	206-44-0	**0.0194**	0.00834	mg/kg	11.07.19 10.52		5
Fluorene	86-73-7	BRL	0.00834	mg/kg	11.07.19 10.52	U	5
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0102**	0.00834	mg/kg	11.07.19 10.52		5
Naphthalene	91-20-3	BRL	0.0834	mg/kg	11.07.19 10.52	U	5
Phenanthrene	85-01-8	**0.00888**	0.00834	mg/kg	11.07.19 10.52		5
Pyrene	129-00-0	**0.0238**	0.00834	mg/kg	11.07.19 10.52		5

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	90	%	31-130	11.07.19 10.52	
2-Fluorobiphenyl	99	%	51-133	11.07.19 10.52	
Terphenyl-D14	110	%	46-137	11.07.19 10.52	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-15.0-15.5**
Lab Sample Id: 642000-049
Matrix: Soil
Date Collected: 11.02.19 10.35
Date Received: 11.05.19 10.00
Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3106613
Date Prep: 11.06.19 09.05
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.06.19 14.17	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3106705
Date Prep: 11.06.19 10.55
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.9**	1.67	mg/kg	11.06.19 23.22		10
Barium	7440-39-3	**134**	3.33	mg/kg	11.06.19 23.22		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.06.19 23.22	U	10
Chromium	7440-47-3	**3.78**	3.33	mg/kg	11.06.19 23.22		10
Lead	7439-92-1	**9.47**	1.67	mg/kg	11.06.19 23.22		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.06.19 23.22	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.06.19 23.22	U	10

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-15.0-15.5**
Lab Sample Id: 642000-049

Matrix: Soil
Date Collected: 11.02.19 10.35

Date Received: 11.05.19 10.00
Sample Depth: 15.0 - 15.5

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710

Date Prep: 11.06.19 09.39

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.07.19 02.14	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.07.19 02.14	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.07.19 02.14	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	126	%	31-130	11.07.19 02.14	
2-Fluorobiphenyl	129	%	51-133	11.07.19 02.14	
Terphenyl-D14	133	%	46-137	11.07.19 02.14	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-20.0-20.5**
Matrix: Soil
Date Received: 11.05.19 10.00
Lab Sample Id: 642000-050
Date Collected: 11.02.19 10.50
Sample Depth: 20.0 - 20.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.06.19 09.05
Basis: Wet Weight
Seq Number: 3106613
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.06.19 14.19	U	1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.06.19 10.55
Basis: Wet Weight
Seq Number: 3106705
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**18.2**	1.96	mg/kg	11.06.19 23.31		10
Barium	7440-39-3	**906**	3.92	mg/kg	11.06.19 23.31		10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.06.19 23.31	U	10
Chromium	7440-47-3	**16.1**	3.92	mg/kg	11.06.19 23.31		10
Lead	7439-92-1	**11.6**	1.96	mg/kg	11.06.19 23.31		10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.06.19 23.31	U	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.06.19 23.31	U	10

Analytical Method: FOC By ASTM D2974
Tech: YAV
% Moisture:
Analyst: YAV
Basis: Wet Weight
Seq Number: 3106776

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**3.60**	0.0100	%	11.07.19 15.07	+	1

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-20.0-20.5**
Lab Sample Id: 642000-050

Matrix: Soil
Date Collected: 11.02.19 10.50

Date Received: 11.05.19 10.00
Sample Depth: 20.0 - 20.5

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710

Date Prep: 11.06.19 09.42

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 02.31	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 02.31	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 02.31	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 02.31	U	1
Benzo(a)pyrene	50-32-8	**0.00268**	0.00167	mg/kg	11.07.19 02.31		1
Benzo(b)fluoranthene	205-99-2	**0.00353**	0.00167	mg/kg	11.07.19 02.31		1
Benzo(g,h,i)perylene	191-24-2	**0.00376**	0.00167	mg/kg	11.07.19 02.31		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 02.31	U	1
Chrysene	218-01-9	**0.00216**	0.00167	mg/kg	11.07.19 02.31		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 02.31	U	1
Fluoranthene	206-44-0	**0.00517**	0.00167	mg/kg	11.07.19 02.31		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 02.31	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00252**	0.00167	mg/kg	11.07.19 02.31		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 02.31	U	1
Phenanthrene	85-01-8	**0.00348**	0.00167	mg/kg	11.07.19 02.31		1
Pyrene	129-00-0	**0.00657**	0.00167	mg/kg	11.07.19 02.31		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	109	%	31-130	11.07.19 02.31	
2-Fluorobiphenyl	114	%	51-133	11.07.19 02.31	
Terphenyl-D14	127	%	46-137	11.07.19 02.31	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-25.0-25.5** Matrix: Soil Date Received:11.05.19 10.00
Lab Sample Id: 642000-051 Date Collected: 11.02.19 11.15 Sample Depth: 25.0 - 25.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture:
Analyst: ANJ Date Prep: 11.06.19 09.05 Basis: Wet Weight
Seq Number: 3106613 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.06.19 14.21	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight
Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.17**	1.67	mg/kg	11.06.19 23.34		10
Barium	7440-39-3	**54.5**	3.33	mg/kg	11.06.19 23.34		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.06.19 23.34	U	10
Chromium	7440-47-3	**9.34**	3.33	mg/kg	11.06.19 23.34		10
Lead	7439-92-1	**4.13**	1.67	mg/kg	11.06.19 23.34		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.06.19 23.34	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.06.19 23.34	U	10

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-25.0-25.5**
Lab Sample Id: 642000-051

Matrix: Soil
Date Collected: 11.02.19 11.15

Date Received: 11.05.19 10.00
Sample Depth: 25.0 - 25.5

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710

Date Prep: 11.06.19 09.45

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 02.48	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 02.48	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 02.48	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	127	%	31-130	11.07.19 02.48	
2-Fluorobiphenyl	129	%	51-133	11.07.19 02.48	
Terphenyl-D14	133	%	46-137	11.07.19 02.48	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110219** Matrix: Soil Date Received:11.05.19 10.00

Lab Sample Id: 642000-052 Date Collected: 11.02.19 09.55

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.06.19 09.05 Basis: Wet Weight

Seq Number: 3106613 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.06.19 14.23	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.06.19 10.55 Basis: Wet Weight

Seq Number: 3106705 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.1**	1.85	mg/kg	11.06.19 23.37		10
Barium	7440-39-3	**18.9**	3.70	mg/kg	11.06.19 23.37		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.06.19 23.37	U	10
Chromium	7440-47-3	**5.26**	3.70	mg/kg	11.06.19 23.37		10
Lead	7439-92-1	**8.24**	1.85	mg/kg	11.06.19 23.37		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.06.19 23.37	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.06.19 23.37	U	10

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110219**
Lab Sample Id: 642000-052

Matrix: Soil
Date Collected: 11.02.19 09.55

Date Received:11.05.19 10.00

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710

Date Prep: 11.06.19 09.48

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 03.05	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 03.05	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 03.05	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	115	%	31-130	11.07.19 03.05	
2-Fluorobiphenyl	120	%	51-133	11.07.19 03.05	
Terphenyl-D14	135	%	46-137	11.07.19 03.05	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B26-30.0-30.5**
Matrix: Soil
Date Received:11.05.19 10.00
Lab Sample Id: 642000-053
Date Collected: 11.02.19 13.25
Sample Depth: 30.0 - 30.5

Analytical Method: FOC By ASTM D2974
Tech: YAV
Analyst: YAV
Seq Number: 3106776
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**1.60**	0.0100	%	11.07.19 15.07	+	1

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710
Date Prep: 11.06.19 09.51
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.07.19 03.22	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.07.19 03.22	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.07.19 03.22	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	117	%	31-130	11.07.19 03.22	
2-Fluorobiphenyl	119	%	51-133	11.07.19 03.22	
Terphenyl-D14	123	%	46-137	11.07.19 03.22	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B27-30.0-30.5**
Matrix: Soil
Date Received:11.05.19 10.00
Lab Sample Id: 642000-054
Date Collected: 11.04.19 09.50
Sample Depth: 30.0 - 30.5

Analytical Method: FOC By ASTM D2974
Tech: YAV
Analyst: YAV
Seq Number: 3106776
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Fraction Organic Carbon	FOC	**0.500**	0.0100	%	11.07.19 15.07	+	1

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710
Date Prep: 11.06.19 09.54
Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 03.39	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 03.39	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 03.39	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	122	%	31-130	11.07.19 03.39	
2-Fluorobiphenyl	123	%	51-133	11.07.19 03.39	
Terphenyl-D14	131	%	46-137	11.07.19 03.39	

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B27-40.0-40.5**
Lab Sample Id: 642000-055

Matrix: Soil
Date Collected: 11.04.19 11.05

Date Received: 11.05.19 10.00
Sample Depth: 40.0 - 40.5

Analytical Method: PAHs by 8270D SIM
Tech: DRU
Analyst: DNE
Seq Number: 3106710

Date Prep: 11.06.19 09.57

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.07.19 03.56	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.07.19 03.56	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.07.19 03.56	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	121	%	31-130	11.07.19 03.56	
2-Fluorobiphenyl	122	%	51-133	11.07.19 03.56	
Terphenyl-D14	131	%	46-137	11.07.19 03.56	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-102919**
Lab Sample Id: 642000-056
Matrix: Soil
Date Collected: 10.29.19 00.00
Date Received:11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.00
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,1-Dichloroethane	75-34-3	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,1-Dichloroethene	75-35-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,1-Dichloropropene	563-58-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2-Dibromoethane	106-93-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2-Dichloroethane	107-06-2	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,2-Dichloropropane	78-87-5	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,3-Dichloropropane	142-28-9	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.250	mg/kg	11.05.19 15.47	U	50
2,2-Dichloropropane	594-20-7	BRL	0.250	mg/kg	11.05.19 15.47	U	50
2-Butanone	78-93-3	BRL	1.00	mg/kg	11.05.19 15.47	U	50
2-Chlorotoluene	95-49-8	BRL	0.250	mg/kg	11.05.19 15.47	U	50
2-Hexanone	591-78-6	BRL	2.50	mg/kg	11.05.19 15.47	U	50
4-Chlorotoluene	106-43-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.50	mg/kg	11.05.19 15.47	U	50
Acetone	67-64-1	BRL	5.00	mg/kg	11.05.19 15.47	U	50
Benzene	71-43-2	BRL	0.0500	mg/kg	11.05.19 15.47	U	50
Bromobenzene	108-86-1	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Bromochloromethane	74-97-5	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Bromodichloromethane	75-27-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Bromoform	75-25-2	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Bromomethane	74-83-9	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Carbon Disulfide	75-15-0	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Carbon Tetrachloride	56-23-5	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Chlorobenzene	108-90-7	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Chloroethane	75-00-3	BRL	0.500	mg/kg	11.05.19 15.47	U	50
Chloroform	67-66-3	BRL	0.250	mg/kg	11.05.19 15.47	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-102919**
Lab Sample Id: 642000-056
Matrix: Soil
Date Collected: 10.29.19 00.00
Date Received:11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502
Date Prep: 11.05.19 15.00
Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.250	mg/kg	11.05.19 15.47	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.250	mg/kg	11.05.19 15.47	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Dibromochloromethane	124-48-1	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Dibromomethane	74-95-3	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Ethylbenzene	100-41-4	BRL	0.0500	mg/kg	11.05.19 15.47	U	50
Hexachlorobutadiene	87-68-3	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.00	mg/kg	11.05.19 15.47	U	50
Isopropylbenzene	98-82-8	BRL	0.250	mg/kg	11.05.19 15.47	U	50
m,p-Xylenes	179601-23-1	BRL	0.100	mg/kg	11.05.19 15.47	U	50
Methylene Chloride	75-09-2	BRL	1.00	mg/kg	11.05.19 15.47	U	50
MTBE	1634-04-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Naphthalene	91-20-3	BRL	0.500	mg/kg	11.05.19 15.47	U	50
n-Butylbenzene	104-51-8	BRL	0.250	mg/kg	11.05.19 15.47	U	50
n-Propylbenzene	103-65-1	BRL	0.250	mg/kg	11.05.19 15.47	U	50
o-Xylene	95-47-6	BRL	0.0500	mg/kg	11.05.19 15.47	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Sec-Butylbenzene	135-98-8	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Styrene	100-42-5	BRL	0.250	mg/kg	11.05.19 15.47	U	50
tert-Butylbenzene	98-06-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Tetrachloroethylene	127-18-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Toluene	108-88-3	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Total Xylenes	1330-20-7	BRL	0.0500	mg/kg	11.05.19 15.47	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.250	mg/kg	11.05.19 15.47	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Trichloroethene	79-01-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Trichlorofluoromethane	75-69-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Vinyl Acetate	108-05-4	BRL	0.500	mg/kg	11.05.19 15.47	U	50
Vinyl Chloride	75-01-4	BRL	0.250	mg/kg	11.05.19 15.47	U	50
1,3-Butadiene	106-99-0	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Cyclohexane	110-82-7	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Dicyclopentadiene	77-73-6	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Methylcyclohexane	108-87-2	BRL	0.500	mg/kg	11.05.19 15.47	U	50
n-Hexane	110-54-3	BRL	0.500	mg/kg	11.05.19 15.47	U	50
4-Ethyltoluene	622-96-8	BRL	0.250	mg/kg	11.05.19 15.47	U	50
Propene	115-07-1	BRL	0.250	mg/kg	11.05.19 15.47	U	50

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-102919**
Lab Sample Id: 642000-056

Matrix: Soil
Date Collected: 10.29.19 00.00

Date Received: 11.05.19 10.00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3106502

Date Prep: 11.05.19 15.00

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	86	%	53-142	11.05.19 15.47	
1,2-Dichloroethane-D4	99	%	56-150	11.05.19 15.47	
Toluene-D8	102	%	70-130	11.05.19 15.47	
4-Bromofluorobenzene	96	%	68-152	11.05.19 15.47	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-102919** Matrix: Water Date Received:11.05.19 10.00

Lab Sample Id: 642000-057 Date Collected: 10.29.19 10.20

Analytical Method: Recoverable Metals,Total, by EPA 200.8 Prep Method: E200.8P

Tech: MLI % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.45

Seq Number: 3106670 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	BRL	0.00400	mg/L	11.07.19 02.58	U	1
Barium	7440-39-3	**0.00711**	0.00400	mg/L	11.07.19 02.58		1
Cadmium	7440-43-9	BRL	0.00200	mg/L	11.07.19 02.58	U	1
Chromium	7440-47-3	BRL	0.00400	mg/L	11.07.19 02.58	U	1
Lead	7439-92-1	BRL	0.00200	mg/L	11.07.19 02.58	U	1
Selenium	7782-49-2	BRL	0.00200	mg/L	11.07.19 02.58	U	1
Silver	7440-22-4	BRL	0.00200	mg/L	11.07.19 02.58	U	1

Analytical Method: Mercury, Total by EPA 245.1 Prep Method: E245.1P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.07.19 08.30

Seq Number: 3106796

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.000200	mg/L	11.07.19 16.13	U	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-102919**
Matrix: Water
Date Received:11.05.19 10.00
Lab Sample Id: 642000-057
Date Collected: 10.29.19 10.20

Analytical Method: PAHs by SW846 8270D SIM
Prep Method: SW3511
Tech: AHI
% Moisture:
Analyst: DNE
Date Prep: 11.05.19 14.44
Seq Number: 3106671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	BRL	0.000194	mg/L	11.06.19 18.58	U	1
2-Methylnaphthalene	91-57-6	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Acenaphthene	83-32-9	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Acenaphthylene	208-96-8	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Anthracene	120-12-7	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Benzo(a)anthracene	56-55-3	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Benzo(a)pyrene	50-32-8	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Chrysene	218-01-9	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Dibenz(a,h)anthracene	53-70-3	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Fluoranthene	206-44-0	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Fluorene	86-73-7	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Naphthalene	91-20-3	BRL	0.000387	mg/L	11.06.19 18.58	U	1
Phenanthrene	85-01-8	BRL	0.000194	mg/L	11.06.19 18.58	U	1
Pyrene	129-00-0	BRL	0.000194	mg/L	11.06.19 18.58	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
2-Fluorobiphenyl	132	%	54-146	11.06.19 18.58	
Nitrobenzene-d5	134	%	46-151	11.06.19 18.58	
Terphenyl-D14	102	%	51-139	11.06.19 18.58	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-102919**
Lab Sample Id: 642000-057
Matrix: Water
Date Collected: 10.29.19 10.20
Date Received:11.05.19 10.00

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3106574
Date Prep: 11.05.19 17.14
Prep Method: SW5030B
% Moisture:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acetone	67-64-1	BRL	0.100	mg/L	11.05.19 17.36	U	1
Benzene	71-43-2	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Bromobenzene	108-86-1	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Bromochloromethane	74-97-5	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Bromodichloromethane	75-27-4	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Bromoform	75-25-2	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Methyl bromide	74-83-9	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Methyl ethyl ketone	78-93-3	BRL	0.0500	mg/L	11.05.19 17.36	U	1
n-Butylbenzene	104-51-8	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Sec-Butylbenzene	135-98-8	BRL	0.00100	mg/L	11.05.19 17.36	U	1
tert-Butylbenzene	98-06-6	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Carbon Disulfide	75-15-0	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Carbon Tetrachloride	56-23-5	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Chlorobenzene	108-90-7	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Chloroethane	75-00-3	BRL	0.0100	mg/L	11.05.19 17.36	U	1
Chloroform	67-66-3	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1-Chlorohexane	544-10-5	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Methyl Chloride	74-87-3	BRL	0.0100	mg/L	11.05.19 17.36	U	1
2-Chlorotoluene	95-49-8	BRL	0.00100	mg/L	11.05.19 17.36	U	1
4-Chlorotoluene	106-43-4	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Cyclohexane	110-82-7	BRL	0.00500	mg/L	11.05.19 17.36	U*	1
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Dibromochloromethane	124-48-1	BRL	0.00500	mg/L	11.05.19 17.36	U	1
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,2-Dibromoethane	106-93-4	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Methylene Bromide	74-95-3	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,2-Dichlorobenzene	95-50-1	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,3-Dichlorobenzene	541-73-1	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,4-Dichlorobenzene	106-46-7	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Dichlorodifluoromethane	75-71-8	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,1-Dichloroethane	75-34-3	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,2-Dichloroethane	107-06-2	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,1-Dichloroethene	75-35-4	BRL	0.00100	mg/L	11.05.19 17.36	U	1
cis-1,2-Dichloroethylene	156-59-2	BRL	0.00100	mg/L	11.05.19 17.36	U	1
trans-1,2-dichloroethylene	156-60-5	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,2-Dichloropropane	78-87-5	BRL	0.00500	mg/L	11.05.19 17.36	U	1
1,3-Dichloropropane	142-28-9	BRL	0.00500	mg/L	11.05.19 17.36	U	1
2,2-Dichloropropane	594-20-7	BRL	0.00500	mg/L	11.05.19 17.36	U	1

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-102919**
Lab Sample Id: 642000-057
Matrix: Water
Date Collected: 10.29.19 10.20
Date Received:11.05.19 10.00

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3106574
Prep Method: SW5030B
% Moisture:
Date Prep: 11.05.19 17.14

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1-Dichloropropene	563-58-6	BRL	0.00500	mg/L	11.05.19 17.36	U	1
cis-1,3-Dichloropropene	10061-01-5	BRL	0.00500	mg/L	11.05.19 17.36	U	1
trans-1,3-dichloropropene	10061-02-6	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Ethylbenzene	100-41-4	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Hexachlorobutadiene	87-68-3	BRL	0.00500	mg/L	11.05.19 17.36	U	1
2-Hexanone	591-78-6	BRL	0.0500	mg/L	11.05.19 17.36	U	1
Isopropylbenzene	98-82-8	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Methylcyclohexane	108-87-2	BRL	0.0100	mg/L	11.05.19 17.36	U	1
Methylene Chloride	75-09-2	BRL	0.0100	mg/L	11.05.19 17.36	U	1
Methyl iodide	74-88-4	BRL	0.0200	mg/L	11.05.19 17.36	U	1
4-Methyl-2-Pentanone	108-10-1	BRL	0.0500	mg/L	11.05.19 17.36	U	1
MTBE	1634-04-4	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Naphthalene	91-20-3	BRL	0.0100	mg/L	11.05.19 17.36	U	1
n-Propylbenzene	103-65-1	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Styrene	100-42-5	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Tetrachloroethene	127-18-4	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Toluene	108-88-3	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,2,3-Trichlorobenzene	87-61-6	BRL	0.00500	mg/L	11.05.19 17.36	U	1
1,2,4-Trichlorobenzene	120-82-1	BRL	0.00500	mg/L	11.05.19 17.36	U	1
1,1,1-Trichloroethane	71-55-6	BRL	0.00500	mg/L	11.05.19 17.36	U	1
1,1,2-Trichloroethane	79-00-5	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Trichloroethylene	79-01-6	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Trichlorofluoromethane	75-69-4	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,2,3-Trichloropropane	96-18-4	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,2,4-Trimethylbenzene	95-63-6	BRL	0.00100	mg/L	11.05.19 17.36	U	1
1,3,5-Trimethylbenzene	108-67-8	BRL	0.00100	mg/L	11.05.19 17.36	U	1
o-Xylene	95-47-6	BRL	0.00100	mg/L	11.05.19 17.36	U	1
m,p-Xylenes	179601-23-1	BRL	0.0100	mg/L	11.05.19 17.36	U	1
Vinyl Acetate	108-05-4	BRL	0.0500	mg/L	11.05.19 17.36	U	1
Vinyl Chloride	75-01-4	BRL	0.00200	mg/L	11.05.19 17.36	U	1
1,3-Butadiene	106-99-0	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Dicyclopentadiene	77-73-6	BRL	0.00500	mg/L	11.05.19 17.36	U	1
n-Hexane	110-54-3	BRL	0.00500	mg/L	11.05.19 17.36	U	1
Total Xylenes	1330-20-7	BRL	0.00100	mg/L	11.05.19 17.36	U	1
Total Trihalomethanes		BRL	0.00100	mg/L	11.05.19 17.36	U	1

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-102919**
Lab Sample Id: 642000-057

Matrix: Water
Date Collected: 10.29.19 10.20

Date Received:11.05.19 10.00

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3106574

Prep Method: SW5030B
% Moisture:

Date Prep: 11.05.19 17.14

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	104	%	75-131	11.05.19 17.36	
1,2-Dichloroethane-D4	106	%	63-144	11.05.19 17.36	
Toluene-D8	97	%	80-117	11.05.19 17.36	
4-Bromofluorobenzene	103	%	74-124	11.05.19 17.36	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-110219** Matrix: Water Date Received:11.05.19 10.00

Lab Sample Id: 642000-058 Date Collected: 11.02.19 15.50

Analytical Method: Recoverable Metals,Total, by EPA 200.8 Prep Method: E200.8P

Tech: MLI % Moisture:

Analyst: DEP Date Prep: 11.06.19 09.45

Seq Number: 3106670 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	BRL	0.00400	mg/L	11.07.19 03.01	U	1
Barium	7440-39-3	BRL	0.00400	mg/L	11.07.19 03.01	U	1
Cadmium	7440-43-9	BRL	0.00200	mg/L	11.07.19 03.01	U	1
Chromium	7440-47-3	BRL	0.00400	mg/L	11.07.19 03.01	U	1
Lead	7439-92-1	BRL	0.00200	mg/L	11.07.19 03.01	U	1
Selenium	7782-49-2	BRL	0.00200	mg/L	11.07.19 03.01	U	1
Silver	7440-22-4	BRL	0.00200	mg/L	11.07.19 03.01	U	1

Analytical Method: Mercury, Total by EPA 245.1 Prep Method: E245.1P

Tech: ADS % Moisture:

Analyst: ANJ Date Prep: 11.07.19 08.30

Seq Number: 3106796

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.000200	mg/L	11.07.19 16.15	U	1

Certificate of Analytical Results 642000

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-110219**
Matrix: Water
Date Received:11.05.19 10.00
Lab Sample Id: 642000-058
Date Collected: 11.02.19 15.50

Analytical Method: PAHs by SW846 8270D SIM
Prep Method: SW3511
Tech: AHI
% Moisture:
Analyst: DNE
Date Prep: 11.05.19 14.53
Seq Number: 3106671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	BRL	0.000188	mg/L	11.06.19 19.48	U	1
2-Methylnaphthalene	91-57-6	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Acenaphthene	83-32-9	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Acenaphthylene	208-96-8	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Anthracene	120-12-7	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Benzo(a)anthracene	56-55-3	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Benzo(a)pyrene	50-32-8	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Chrysene	218-01-9	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Dibenz(a,h)anthracene	53-70-3	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Fluoranthene	206-44-0	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Fluorene	86-73-7	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Naphthalene	91-20-3	BRL	0.000375	mg/L	11.06.19 19.48	U	1
Phenanthrene	85-01-8	BRL	0.000188	mg/L	11.06.19 19.48	U	1
Pyrene	129-00-0	BRL	0.000188	mg/L	11.06.19 19.48	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
2-Fluorobiphenyl	132	%	54-146	11.06.19 19.48	
Nitrobenzene-d5	133	%	46-151	11.06.19 19.48	
Terphenyl-D14	90	%	51-139	11.06.19 19.48	

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-110219**
Lab Sample Id: 642000-058

Matrix: Water
Date Collected: 11.02.19 15.50

Date Received:11.05.19 10.00

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3106574

Date Prep: 11.05.19 17.14

Prep Method: SW5030B
% Moisture:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acetone	67-64-1	BRL	0.100	mg/L	11.05.19 18.00	U	1
Benzene	71-43-2	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Bromobenzene	108-86-1	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Bromochloromethane	74-97-5	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Bromodichloromethane	75-27-4	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Bromoform	75-25-2	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Methyl bromide	74-83-9	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Methyl ethyl ketone	78-93-3	BRL	0.0500	mg/L	11.05.19 18.00	U	1
n-Butylbenzene	104-51-8	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Sec-Butylbenzene	135-98-8	BRL	0.00100	mg/L	11.05.19 18.00	U	1
tert-Butylbenzene	98-06-6	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Carbon Disulfide	75-15-0	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Carbon Tetrachloride	56-23-5	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Chlorobenzene	108-90-7	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Chloroethane	75-00-3	BRL	0.0100	mg/L	11.05.19 18.00	U	1
Chloroform	67-66-3	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1-Chlorohexane	544-10-5	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Methyl Chloride	74-87-3	BRL	0.0100	mg/L	11.05.19 18.00	U	1
2-Chlorotoluene	95-49-8	BRL	0.00100	mg/L	11.05.19 18.00	U	1
4-Chlorotoluene	106-43-4	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Cyclohexane	110-82-7	BRL	0.00500	mg/L	11.05.19 18.00	U*	1
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Dibromochloromethane	124-48-1	BRL	0.00500	mg/L	11.05.19 18.00	U	1
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,2-Dibromoethane	106-93-4	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Methylene Bromide	74-95-3	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,2-Dichlorobenzene	95-50-1	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,3-Dichlorobenzene	541-73-1	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,4-Dichlorobenzene	106-46-7	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Dichlorodifluoromethane	75-71-8	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,1-Dichloroethane	75-34-3	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,2-Dichloroethane	107-06-2	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,1-Dichloroethene	75-35-4	BRL	0.00100	mg/L	11.05.19 18.00	U	1
cis-1,2-Dichloroethylene	156-59-2	BRL	0.00100	mg/L	11.05.19 18.00	U	1
trans-1,2-dichloroethylene	156-60-5	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,2-Dichloropropane	78-87-5	BRL	0.00500	mg/L	11.05.19 18.00	U	1
1,3-Dichloropropane	142-28-9	BRL	0.00500	mg/L	11.05.19 18.00	U	1
2,2-Dichloropropane	594-20-7	BRL	0.00500	mg/L	11.05.19 18.00	U	1

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-EB01-110219**
Lab Sample Id: 642000-058
Matrix: Water
Date Collected: 11.02.19 15.50
Date Received:11.05.19 10.00

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3106574
Date Prep: 11.05.19 17.14
Prep Method: SW5030B
% Moisture:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1-Dichloropropene	563-58-6	BRL	0.00500	mg/L	11.05.19 18.00	U	1
cis-1,3-Dichloropropene	10061-01-5	BRL	0.00500	mg/L	11.05.19 18.00	U	1
trans-1,3-dichloropropene	10061-02-6	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Ethylbenzene	100-41-4	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Hexachlorobutadiene	87-68-3	BRL	0.00500	mg/L	11.05.19 18.00	U	1
2-Hexanone	591-78-6	BRL	0.0500	mg/L	11.05.19 18.00	U	1
Isopropylbenzene	98-82-8	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Methylcyclohexane	108-87-2	BRL	0.0100	mg/L	11.05.19 18.00	U	1
Methylene Chloride	75-09-2	BRL	0.0100	mg/L	11.05.19 18.00	U	1
Methyl iodide	74-88-4	BRL	0.0200	mg/L	11.05.19 18.00	U	1
4-Methyl-2-Pentanone	108-10-1	BRL	0.0500	mg/L	11.05.19 18.00	U	1
MTBE	1634-04-4	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Naphthalene	91-20-3	BRL	0.0100	mg/L	11.05.19 18.00	U	1
n-Propylbenzene	103-65-1	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Styrene	100-42-5	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Tetrachloroethene	127-18-4	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Toluene	108-88-3	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,2,3-Trichlorobenzene	87-61-6	BRL	0.00500	mg/L	11.05.19 18.00	U	1
1,2,4-Trichlorobenzene	120-82-1	BRL	0.00500	mg/L	11.05.19 18.00	U	1
1,1,1-Trichloroethane	71-55-6	BRL	0.00500	mg/L	11.05.19 18.00	U	1
1,1,2-Trichloroethane	79-00-5	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Trichloroethylene	79-01-6	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Trichlorofluoromethane	75-69-4	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,2,3-Trichloropropane	96-18-4	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,2,4-Trimethylbenzene	95-63-6	BRL	0.00100	mg/L	11.05.19 18.00	U	1
1,3,5-Trimethylbenzene	108-67-8	BRL	0.00100	mg/L	11.05.19 18.00	U	1
o-Xylene	95-47-6	BRL	0.00100	mg/L	11.05.19 18.00	U	1
m,p-Xylenes	179601-23-1	BRL	0.0100	mg/L	11.05.19 18.00	U	1
Vinyl Acetate	108-05-4	BRL	0.0500	mg/L	11.05.19 18.00	U	1
Vinyl Chloride	75-01-4	BRL	0.00200	mg/L	11.05.19 18.00	U	1
1,3-Butadiene	106-99-0	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Dicyclopentadiene	77-73-6	BRL	0.00500	mg/L	11.05.19 18.00	U	1
n-Hexane	110-54-3	BRL	0.00500	mg/L	11.05.19 18.00	U	1
Total Xylenes	1330-20-7	BRL	0.00100	mg/L	11.05.19 18.00	U	1
Total Trihalomethanes		BRL	0.00100	mg/L	11.05.19 18.00	U	1

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Sample Id: **D-EB01-110219**
Lab Sample Id: 642000-058

Matrix: Water
Date Collected: 11.02.19 15.50

Date Received:11.05.19 10.00

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3106574

Prep Method: SW5030B
% Moisture:

Date Prep: 11.05.19 17.14

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	103	%	75-131	11.05.19 18.00	
1,2-Dichloroethane-D4	105	%	63-144	11.05.19 18.00	
Toluene-D8	96	%	80-117	11.05.19 18.00	
4-Bromofluorobenzene	102	%	74-124	11.05.19 18.00	

QC Summary 642000

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Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3106614 Matrix: Solid Date Prep: 11.06.19
MB Sample Id: 7689738-1-BLK LCS Sample Id: 7689738-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Cyanide, Total	<0.0297	1.20	1.14	95	85-115	mg/kg	11.06.19 12:20	

Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3106614 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-001 MS Sample Id: 642000-001 S MSD Sample Id: 642000-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	<0.0291	2.35	2.11	90	2.15	92	85-115	2	20	mg/kg	11.06.19 12:24	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106627 Matrix: Solid Date Prep: 11.06.19
MB Sample Id: 7689679-1-BLK LCS Sample Id: 7689679-1-BKS LCSD Sample Id: 7689679-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0172	0.189	0.179	95	0.178	94	80-120	1	20	mg/kg	11.06.19 10:49	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106634 Matrix: Solid Date Prep: 11.06.19
MB Sample Id: 7689691-1-BLK LCS Sample Id: 7689691-1-BKS LCSD Sample Id: 7689691-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0172	0.175	0.171	98	0.172	98	80-120	1	20	mg/kg	11.06.19 12:44	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106613 Matrix: Solid Date Prep: 11.06.19
MB Sample Id: 7689712-1-BLK LCS Sample Id: 7689712-1-BKS LCSD Sample Id: 7689712-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0172	0.172	0.157	0	0.158	0	80-120	0	20	mg/kg	11.06.19 16:20	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Final 1.000

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Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106627 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-015 MS Sample Id: 642000-015 S MSD Sample Id: 642000-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0450	0.192	0.200	81	0.197	80	75-125	2	20	mg/kg	11.06.19 10:55	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106627 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-039 MS Sample Id: 642000-039 S MSD Sample Id: 642000-039 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00356	0.185	0.196	106	0.181	98	75-125	8	20	mg/kg	11.06.19 11:25	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106634 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-046 MS Sample Id: 642000-046 S MSD Sample Id: 642000-046 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00370	0.192	0.193	101	0.191	99	75-125	1	20	mg/kg	11.06.19 12:49	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106634 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-048 MS Sample Id: 642000-048 S MSD Sample Id: 642000-048 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00452	0.192	0.191	97	0.196	98	75-125	3	20	mg/kg	11.06.19 13:23	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106613 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-029 MS Sample Id: 642000-029 S MSD Sample Id: 642000-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0304	0.196	0.206	90	0.208	91	75-125	1	20	mg/kg	11.06.19 13:55	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

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Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106613 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-030 MS Sample Id: 642000-030 S MSD Sample Id: 642000-030 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0154	0.192	0.191	91	0.193	93	75-125	1	20	mg/kg	11.06.19 14:30	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106697 Matrix: Solid Date Prep: 11.05.19
MB Sample Id: 7689694-1-BLK LCS Sample Id: 7689694-1-BKS LCSD Sample Id: 7689694-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	9.84	98	9.85	99	80-120	0	20	mg/kg	11.06.19 17:04	
Barium	<0.400	10.0	10.0	100	9.96	100	80-120	0	20	mg/kg	11.06.19 17:04	
Cadmium	<0.200	10.0	9.86	99	10.0	100	80-120	1	20	mg/kg	11.06.19 17:04	
Chromium	<0.400	10.0	9.75	98	9.82	98	80-120	1	20	mg/kg	11.06.19 17:04	
Lead	<0.200	10.0	9.84	98	9.85	99	80-120	0	20	mg/kg	11.06.19 17:04	
Selenium	<0.200	10.0	9.80	98	9.74	97	80-120	1	20	mg/kg	11.06.19 17:04	
Silver	<0.200	5.00	4.97	99	5.04	101	80-120	1	20	mg/kg	11.06.19 17:04	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106630 Matrix: Solid Date Prep: 11.06.19
MB Sample Id: 7689709-1-BLK LCS Sample Id: 7689709-1-BKS LCSD Sample Id: 7689709-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	9.83	98	9.90	99	80-120	1	20	mg/kg	11.06.19 15:17	
Barium	<0.400	10.0	9.79	98	9.84	98	80-120	1	20	mg/kg	11.06.19 15:17	
Cadmium	<0.200	10.0	9.90	99	9.88	99	80-120	0	20	mg/kg	11.06.19 15:17	
Chromium	<0.400	10.0	9.85	99	9.77	98	80-120	1	20	mg/kg	11.06.19 15:17	
Lead	<0.200	10.0	9.87	99	9.82	98	80-120	1	20	mg/kg	11.06.19 15:17	
Selenium	<0.200	10.0	9.88	99	9.82	98	80-120	1	20	mg/kg	11.06.19 15:17	
Silver	<0.200	5.00	5.01	100	5.02	100	80-120	0	20	mg/kg	11.06.19 15:17	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106705 Matrix: Solid Date Prep: 11.06.19
MB Sample Id: 7689732-1-BLK LCS Sample Id: 7689732-1-BKS LCSD Sample Id: 7689732-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	10.1	101	10.2	102	80-120	1	20	mg/kg	11.06.19 21:47	
Barium	<0.400	10.0	9.93	99	9.86	99	80-120	1	20	mg/kg	11.06.19 21:47	
Cadmium	<0.200	10.0	10.1	101	10.1	101	80-120	0	20	mg/kg	11.06.19 21:47	
Chromium	<0.400	10.0	10.0	100	10.1	101	80-120	1	20	mg/kg	11.06.19 21:47	
Lead	<0.200	10.0	10.2	102	10.1	101	80-120	1	20	mg/kg	11.06.19 21:47	
Selenium	<0.200	10.0	10.2	102	10.4	104	80-120	2	20	mg/kg	11.06.19 21:47	
Silver	<0.200	5.00	5.12	102	5.14	103	80-120	0	20	mg/kg	11.06.19 21:47	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

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Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106697 Matrix: Soil Date Prep: 11.05.19
Parent Sample Id: 641645-001 MS Sample Id: 641645-001 S MSD Sample Id: 641645-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<1.69	8.47	10.2	120	11.5	117	75-125	12	30	mg/kg	11.06.19 17:13	
Barium	52.1	8.47	57.5	64	65.3	135	75-125	13	30	mg/kg	11.06.19 17:13	X
Cadmium	<1.69	8.47	8.49	100	9.86	101	75-125	15	30	mg/kg	11.06.19 17:13	
Chromium	<3.39	8.47	11.4	135	13.1	134	75-125	14	30	mg/kg	11.06.19 17:13	X
Lead	1.87	8.47	10.2	98	11.7	100	75-125	14	30	mg/kg	11.06.19 17:13	
Selenium	<1.69	8.47	8.73	103	9.71	99	75-125	11	30	mg/kg	11.06.19 17:13	
Silver	<1.69	4.24	4.00	94	4.63	94	75-125	15	30	mg/kg	11.06.19 17:13	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106630 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-015 MS Sample Id: 642000-015 S MSD Sample Id: 642000-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	10.8	9.26	22.9	131	22.8	125	75-125	0	30	mg/kg	11.06.19 15:29	X
Barium	141	9.26	173	346	173	333	75-125	0	30	mg/kg	11.06.19 15:29	X
Cadmium	<1.85	9.26	11.0	119	11.2	116	75-125	2	30	mg/kg	11.06.19 15:29	
Chromium	11.1	9.26	23.1	130	23.8	132	75-125	3	30	mg/kg	11.06.19 15:29	X
Lead	30.5	9.26	46.2	170	46.2	163	75-125	0	30	mg/kg	11.06.19 15:29	X
Selenium	<1.85	9.26	11.1	120	10.9	113	75-125	2	30	mg/kg	11.06.19 15:29	
Silver	<1.85	4.63	4.97	107	5.08	106	75-125	2	30	mg/kg	11.06.19 15:29	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106705 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-039 MS Sample Id: 642000-039 S MSD Sample Id: 642000-039 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	20.7	9.26	30.5	106	31.7	114	75-125	4	30	mg/kg	11.06.19 22:19	
Barium	84.7	9.26	93.2	92	97.9	137	75-125	5	30	mg/kg	11.06.19 22:19	X
Cadmium	<1.85	9.26	9.21	99	10.0	104	75-125	8	30	mg/kg	11.06.19 22:19	
Chromium	16.5	9.26	25.7	99	27.0	109	75-125	5	30	mg/kg	11.06.19 22:19	
Lead	11.1	9.26	20.4	100	21.7	110	75-125	6	30	mg/kg	11.06.19 22:19	
Selenium	<1.85	9.26	10.1	109	10.6	110	75-125	5	30	mg/kg	11.06.19 22:19	
Silver	<1.85	4.63	4.30	93	4.70	98	75-125	9	30	mg/kg	11.06.19 22:19	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106705 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-046 MS Sample Id: 642000-046 S MSD Sample Id: 642000-046 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	21.2	9.43	33.1	126	32.0	119	75-125	3	30	mg/kg	11.06.19 22:58	X
Barium	81.2	9.43	98.8	187	95.6	158	75-125	3	30	mg/kg	11.06.19 22:58	X
Cadmium	<1.89	9.43	9.65	102	9.80	108	75-125	2	30	mg/kg	11.06.19 22:58	
Chromium	9.13	9.43	19.7	112	19.3	112	75-125	2	30	mg/kg	11.06.19 22:58	
Lead	9.02	9.43	19.6	112	19.4	114	75-125	1	30	mg/kg	11.06.19 22:58	
Selenium	<1.89	9.43	10.3	109	10.2	112	75-125	1	30	mg/kg	11.06.19 22:58	
Silver	<1.89	4.72	4.52	96	4.44	98	75-125	2	30	mg/kg	11.06.19 22:58	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106705 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 642000-048 MS Sample Id: 642000-048 S MSD Sample Id: 642000-048 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	17.3	9.09	26.6	102	25.8	95	75-125	3	30	mg/kg	11.06.19 23:13	
Barium	241	9.09	246	55	239	0	75-125	3	30	mg/kg	11.06.19 23:13	X
Cadmium	<1.82	9.09	9.83	108	9.86	110	75-125	0	30	mg/kg	11.06.19 23:13	
Chromium	8.54	9.09	18.0	104	17.8	104	75-125	1	30	mg/kg	11.06.19 23:13	
Lead	17.4	9.09	27.0	106	25.9	95	75-125	4	30	mg/kg	11.06.19 23:13	
Selenium	<1.82	9.09	10.4	114	10.3	115	75-125	1	30	mg/kg	11.06.19 23:13	
Silver	<1.82	4.55	4.57	100	4.53	102	75-125	1	30	mg/kg	11.06.19 23:13	

Analytical Method: **Recoverable Metals,Total, by EPA 200.8** Prep Method: E200.8P
Seq Number: 3106670 Matrix: Water Date Prep: 11.06.19
MB Sample Id: 7689704-1-BLK LCS Sample Id: 7689704-1-BKS LCSD Sample Id: 7689704-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.00400	0.100	0.0975	98	0.0983	98	85-115	1	20	mg/L	11.07.19 02:22	
Barium	<0.00400	0.100	0.0972	97	0.0963	96	85-115	1	20	mg/L	11.07.19 02:22	
Cadmium	<0.00200	0.100	0.0997	100	0.0996	100	85-115	0	20	mg/L	11.07.19 02:22	
Chromium	<0.00400	0.100	0.0998	100	0.101	101	85-115	1	20	mg/L	11.07.19 02:22	
Lead	<0.00200	0.100	0.0985	99	0.0976	98	85-115	1	20	mg/L	11.07.19 02:22	
Selenium	<0.00200	0.100	0.100	100	0.101	101	85-115	1	20	mg/L	11.07.19 02:22	
Silver	<0.00200	0.0500	0.0496	99	0.0501	100	85-115	1	20	mg/L	11.07.19 02:22	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **Recoverable Metals,Total, by EPA 200.8** Prep Method: E200.8P
Seq Number: 3106670 Matrix: Water Date Prep: 11.06.19
Parent Sample Id: 641966-001 MS Sample Id: 641966-001 S MSD Sample Id: 641966-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.00400	0.100	0.102	102	0.102	102	70-130	0	20	mg/L	11.07.19 02:30	
Barium	0.0872	0.100	0.188	101	0.186	99	70-130	1	20	mg/L	11.07.19 02:30	
Cadmium	<0.00200	0.100	0.0971	97	0.0977	98	70-130	1	20	mg/L	11.07.19 02:30	
Chromium	<0.00400	0.100	0.102	102	0.102	102	70-130	0	20	mg/L	11.07.19 02:30	
Lead	0.00656	0.100	0.108	101	0.108	101	70-130	0	20	mg/L	11.07.19 02:30	
Selenium	<0.00200	0.100	0.102	102	0.103	103	70-130	1	20	mg/L	11.07.19 02:30	
Silver	<0.00200	0.0500	0.0481	96	0.0481	96	70-130	0	20	mg/L	11.07.19 02:30	

Analytical Method: **TCLP Mercury by SW-846 1311/7470A** Prep Method: SW7470P
Seq Number: 3106790 Matrix: Water Date Prep: 11.07.19
MB Sample Id: 7689820-1-BLK LCS Sample Id: 7689820-1-BKS LCSD Sample Id: 7689820-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0000370	0.00200	0.00180	90	0.00182	91	80-120	1	20	mg/L	11.07.19 14:58	

Analytical Method: **TCLP Mercury by SW-846 1311/7470A** Prep Method: SW7470P
Seq Number: 3106790 Matrix: Solid Date Prep: 11.07.19
Parent Sample Id: 641901-001 MS Sample Id: 641901-001 S MSD Sample Id: 641901-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0000760	0.00200	0.00187	90	0.00186	89	75-125	1	20	mg/L	11.07.19 15:04	

Analytical Method: **TCLP Metals per ICP/MS by EPA 6020** Prep Method: SW3010A
Seq Number: 3106707 Matrix: Water Date Prep: 11.06.19
MB Sample Id: 7689708-1-BLK LCS Sample Id: 7689708-1-BKS LCSD Sample Id: 7689708-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.000246	0.100	0.0998	100	0.0984	98	80-120	1	20	mg/L	11.06.19 19:30	
Barium	<0.000484	0.100	0.101	101	0.0982	98	80-120	3	20	mg/L	11.06.19 19:30	
Cadmium	<0.000147	0.100	0.106	106	0.102	102	80-120	4	20	mg/L	11.06.19 19:30	
Chromium	<0.000525	0.100	0.104	104	0.100	100	80-120	4	20	mg/L	11.06.19 19:30	
Lead	<0.000152	0.100	0.103	103	0.100	100	80-120	3	20	mg/L	11.06.19 19:30	
Selenium	<0.000454	0.100	0.100	100	0.0988	99	80-120	1	20	mg/L	11.06.19 19:30	
Silver	<0.00200	0.0500	0.0531	106	0.0516	103	80-120	3	20	mg/L	11.06.19 19:30	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **TCLP Metals per ICP/MS by EPA 6020** Prep Method: SW3010A
Seq Number: 3106707 Matrix: Soil Date Prep: 11.06.19
Parent Sample Id: 639758-002 MS Sample Id: 639758-002 S MSD Sample Id: 639758-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.0200	0.500	0.507	101	0.498	100	75-125	2	20	mg/L	11.06.19 19:39	
Barium	1.51	0.500	2.06	110	2.10	118	75-125	2	20	mg/L	11.06.19 19:39	
Cadmium	<0.0100	0.500	0.503	101	0.497	99	75-125	1	20	mg/L	11.06.19 19:39	
Chromium	<0.0200	0.500	0.512	102	0.507	101	75-125	1	20	mg/L	11.06.19 19:39	
Lead	0.0349	0.500	0.543	102	0.550	103	75-125	1	20	mg/L	11.06.19 19:39	
Selenium	<0.0100	0.500	0.510	102	0.500	100	75-125	2	20	mg/L	11.06.19 19:39	
Silver	<0.0100	0.250	0.256	102	0.251	100	75-125	2	20	mg/L	11.06.19 19:39	

Analytical Method: **FOC By ASTM D2974**
Seq Number: 3106776 Matrix: Solid
MB Sample Id: 3106776-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Fraction Organic Carbon	BRL	%	11.07.19 15:07	

Analytical Method: **FOC By ASTM D2974**
Seq Number: 3106776 Matrix: Soil
Parent Sample Id: 642000-039 MD Sample Id: 642000-039 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Fraction Organic Carbon	1.50	1.60	6	25	%	11.07.19 15:07	

Analytical Method: **Flash Point (CC) SW-846 1010**
Seq Number: 3106624 Matrix: Solid
Parent Sample Id: 641912-001 MD Sample Id: 641912-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	>180	>180	0	25	Deg F	11.06.19 10:04	

Analytical Method: **Flash Point (CC) SW-846 1010**
Seq Number: 3106624 Matrix: Sludge
Parent Sample Id: 642061-001 MD Sample Id: 642061-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	134	136	1	25	Deg F	11.06.19 13:10	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P

Seq Number: 3106796 Matrix: Water Date Prep: 11.07.19

MB Sample Id: 7689798-1-BLK LCS Sample Id: 7689798-1-BKS LCSD Sample Id: 7689798-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00197	99	0.00196	98	85-115	1	20	mg/L	11.07.19 15:43	

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P

Seq Number: 3106796 Matrix: Waste Water Date Prep: 11.07.19

Parent Sample Id: 641703-001 MS Sample Id: 641703-001 S MSD Sample Id: 641703-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0000540	0.00400	0.00390	96	0.00394	97	70-130	1	20	mg/L	11.07.19 15:48	

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P

Seq Number: 3106796 Matrix: Waste Water Date Prep: 11.07.19

Parent Sample Id: 641728-006 MS Sample Id: 641728-006 S MSD Sample Id: 641728-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000527	0.00400	0.00366	92	0.00374	94	70-130	2	20	mg/L	11.07.19 16:18	

Analytical Method: **Paint Filter Liquids Test by SW 9095B**

Seq Number: 3106597 Matrix: Soil

Parent Sample Id: 641882-004 MD Sample Id: 641882-004 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	0		11.06.19 13:30	

Analytical Method: **Paint Filter Liquids Test by SW 9095B**

Seq Number: 3106597 Matrix: Soil

Parent Sample Id: 642000-023 MD Sample Id: 642000-023 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	0		11.06.19 13:30	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **Soil pH by SW-846 9045C**

Seq Number: 3106588 Matrix: Solid

Parent Sample Id: 641912-001 MD Sample Id: 641912-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.10	8.11	0	20	SU	11.06.19 11:26	
Temperature	25.4	25.4	0	25	Deg C	11.06.19 11:26	

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106710 Matrix: Solid Date Prep: 11.06.19

MB Sample Id: 7689698-1-BLK LCS Sample Id: 7689698-1-BKS LCSD Sample Id: 7689698-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0264	79	0.0249	75	42-116	6	25	mg/kg	11.06.19 20:21	
Acenaphthylene	<0.00167	0.0333	0.0253	76	0.0241	72	42-121	5	25	mg/kg	11.06.19 20:21	
Anthracene	<0.00167	0.0333	0.0262	79	0.0258	77	44-120	2	25	mg/kg	11.06.19 20:21	
Benzo(a)anthracene	<0.00167	0.0333	0.0276	83	0.0285	86	52-121	3	25	mg/kg	11.06.19 20:21	
Benzo(a)pyrene	<0.00167	0.0333	0.0280	84	0.0288	86	50-128	3	25	mg/kg	11.06.19 20:21	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0304	91	0.0316	95	49-137	4	25	mg/kg	11.06.19 20:21	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0286	86	0.0296	89	47-132	3	25	mg/kg	11.06.19 20:21	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0282	85	0.0291	87	48-133	3	25	mg/kg	11.06.19 20:21	
Chrysene	<0.00167	0.0333	0.0270	81	0.0282	85	54-113	4	25	mg/kg	11.06.19 20:21	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0297	89	0.0304	91	48-133	2	25	mg/kg	11.06.19 20:21	
Fluoranthene	<0.00167	0.0333	0.0287	86	0.0296	89	54-128	3	25	mg/kg	11.06.19 20:21	
Fluorene	<0.00167	0.0333	0.0264	79	0.0253	76	44-118	4	25	mg/kg	11.06.19 20:21	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0294	88	0.0304	91	49-129	3	25	mg/kg	11.06.19 20:21	
Naphthalene	<0.0167	0.0333	0.0257	77	0.0239	72	40-135	7	25	mg/kg	11.06.19 20:21	
Phenanthrene	<0.00167	0.0333	0.0273	82	0.0272	82	44-119	0	25	mg/kg	11.06.19 20:21	
Pyrene	<0.00167	0.0333	0.0269	81	0.0280	84	50-126	4	25	mg/kg	11.06.19 20:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	91		97		89		31-130	%	11.06.19 20:21
2-Fluorobiphenyl	100		102		94		51-133	%	11.06.19 20:21
Terphenyl-D14	105		105		105		46-137	%	11.06.19 20:21

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106739 Matrix: Solid Date Prep: 11.06.19

MB Sample Id: 7689696-1-BLK LCS Sample Id: 7689696-1-BKS LCSD Sample Id: 7689696-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0251	75	0.0261	78	42-116	4	25	mg/kg	11.06.19 21:11	
Acenaphthylene	<0.00167	0.0333	0.0243	73	0.0253	76	42-121	4	25	mg/kg	11.06.19 21:11	
Anthracene	<0.00167	0.0333	0.0261	78	0.0269	81	44-120	3	25	mg/kg	11.06.19 21:11	
Benzo(a)anthracene	<0.00167	0.0333	0.0292	88	0.0292	88	52-121	0	25	mg/kg	11.06.19 21:11	
Benzo(a)pyrene	<0.00167	0.0333	0.0300	90	0.0299	90	50-128	0	25	mg/kg	11.06.19 21:11	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0324	97	0.0329	99	49-137	2	25	mg/kg	11.06.19 21:11	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0304	91	0.0303	91	47-132	0	25	mg/kg	11.06.19 21:11	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0307	92	0.0293	88	48-133	5	25	mg/kg	11.06.19 21:11	
Chrysene	<0.00167	0.0333	0.0290	87	0.0283	85	54-113	2	25	mg/kg	11.06.19 21:11	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0316	95	0.0315	95	48-133	0	25	mg/kg	11.06.19 21:11	
Fluoranthene	<0.00167	0.0333	0.0296	89	0.0297	89	54-128	0	25	mg/kg	11.06.19 21:11	
Fluorene	<0.00167	0.0333	0.0254	76	0.0265	80	44-118	4	25	mg/kg	11.06.19 21:11	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0313	94	0.0311	93	49-129	1	25	mg/kg	11.06.19 21:11	
Naphthalene	<0.0167	0.0333	0.0235	71	0.0248	74	40-135	5	25	mg/kg	11.06.19 21:11	
Phenanthrene	<0.00167	0.0333	0.0269	81	0.0277	83	44-119	3	25	mg/kg	11.06.19 21:11	
Pyrene	<0.00167	0.0333	0.0279	84	0.0280	84	50-126	0	25	mg/kg	11.06.19 21:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	85		88		91		31-130	%	11.06.19 21:11
2-Fluorobiphenyl	91		93		97		51-133	%	11.06.19 21:11
Terphenyl-D14	107		108		107		46-137	%	11.06.19 21:11

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106745 Matrix: Solid Date Prep: 11.06.19

MB Sample Id: 7689697-1-BLK LCS Sample Id: 7689697-1-BKS LCSD Sample Id: 7689697-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0329	99	0.0318	95	42-116	3	25	mg/kg	11.06.19 22:01	
Acenaphthylene	<0.00167	0.0333	0.0321	96	0.0311	93	42-121	3	25	mg/kg	11.06.19 22:01	
Anthracene	<0.00167	0.0333	0.0340	102	0.0328	98	44-120	4	25	mg/kg	11.06.19 22:01	
Benzo(a)anthracene	<0.00167	0.0333	0.0355	107	0.0340	102	52-121	4	25	mg/kg	11.06.19 22:01	
Benzo(a)pyrene	<0.00167	0.0333	0.0369	111	0.0350	105	50-128	5	25	mg/kg	11.06.19 22:01	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0384	115	0.0366	110	49-137	5	25	mg/kg	11.06.19 22:01	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0373	112	0.0352	106	47-132	6	25	mg/kg	11.06.19 22:01	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0378	114	0.0357	107	48-133	6	25	mg/kg	11.06.19 22:01	
Chrysene	<0.00167	0.0333	0.0349	105	0.0333	100	54-113	5	25	mg/kg	11.06.19 22:01	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0379	114	0.0365	110	48-133	4	25	mg/kg	11.06.19 22:01	
Fluoranthene	<0.00167	0.0333	0.0384	115	0.0359	108	54-128	7	25	mg/kg	11.06.19 22:01	
Fluorene	<0.00167	0.0333	0.0331	99	0.0323	97	44-118	2	25	mg/kg	11.06.19 22:01	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0380	114	0.0361	108	49-129	5	25	mg/kg	11.06.19 22:01	
Naphthalene	<0.0167	0.0333	0.0317	95	0.0303	91	40-135	5	25	mg/kg	11.06.19 22:01	
Phenanthrene	<0.00167	0.0333	0.0353	106	0.0340	102	44-119	4	25	mg/kg	11.06.19 22:01	
Pyrene	<0.00167	0.0333	0.0367	110	0.0339	102	50-126	8	25	mg/kg	11.06.19 22:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	111		124		117		31-130	%	11.06.19 22:01
2-Fluorobiphenyl	115		127		119		51-133	%	11.06.19 22:01
Terphenyl-D14	122		134		127		46-137	%	11.06.19 22:01

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106710 Matrix: Soil Date Prep: 11.06.19

Parent Sample Id: 642000-046 MS Sample Id: 642000-046 S MSD Sample Id: 642000-046 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0337	101	0.0336	101	42-116	0	25	mg/kg	11.06.19 23:41	
Acenaphthylene	<0.00167	0.0333	0.0324	97	0.0319	96	42-121	2	25	mg/kg	11.06.19 23:41	
Anthracene	<0.00167	0.0333	0.0346	104	0.0345	104	44-120	0	25	mg/kg	11.06.19 23:41	
Benzo(a)anthracene	0.00177	0.0333	0.0358	102	0.0358	102	52-121	0	25	mg/kg	11.06.19 23:41	
Benzo(a)pyrene	0.00299	0.0333	0.0374	103	0.0374	103	50-128	0	25	mg/kg	11.06.19 23:41	
Benzo(b)fluoranthene	0.00400	0.0333	0.0401	108	0.0402	109	49-137	0	25	mg/kg	11.06.19 23:41	
Benzo(g,h,i)perylene	0.00464	0.0333	0.0383	101	0.0388	103	47-132	1	25	mg/kg	11.06.19 23:41	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0355	107	0.0348	105	48-133	2	25	mg/kg	11.06.19 23:41	
Chrysene	0.00231	0.0333	0.0352	99	0.0358	101	54-113	2	25	mg/kg	11.06.19 23:41	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0377	113	0.0376	113	48-133	0	25	mg/kg	11.06.19 23:41	
Fluoranthene	0.00726	0.0333	0.0395	97	0.0392	96	54-128	1	25	mg/kg	11.06.19 23:41	
Fluorene	<0.00167	0.0333	0.0339	102	0.0337	101	44-118	1	25	mg/kg	11.06.19 23:41	
Indeno(1,2,3-c,d)Pyrene	0.00299	0.0333	0.0386	107	0.0387	107	49-129	0	25	mg/kg	11.06.19 23:41	
Naphthalene	<0.0167	0.0333	0.0325	98	0.0324	97	40-135	0	25	mg/kg	11.06.19 23:41	
Phenanthrene	0.00574	0.0333	0.0365	92	0.0366	93	44-119	0	25	mg/kg	11.06.19 23:41	
Pyrene	0.00841	0.0333	0.0374	87	0.0382	89	50-126	2	25	mg/kg	11.06.19 23:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	121		122		31-130	%	11.06.19 23:41
2-Fluorobiphenyl	127		128		51-133	%	11.06.19 23:41
Terphenyl-D14	131		134		46-137	%	11.06.19 23:41

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106710 Matrix: Soil Date Prep: 11.06.19

Parent Sample Id: 642000-048 MS Sample Id: 642000-048 S MSD Sample Id: 642000-048 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00834	0.0333	0.0275	83	0.0273	82	42-116	1	25	mg/kg	11.07.19 11:08	
Acenaphthylene	<0.00834	0.0333	0.0282	85	0.0319	96	42-121	12	25	mg/kg	11.07.19 11:08	
Anthracene	<0.00834	0.0333	0.0297	89	0.0313	94	44-120	5	25	mg/kg	11.07.19 11:08	
Benzo(a)anthracene	<0.00834	0.0333	0.0343	103	0.0395	119	52-121	14	25	mg/kg	11.07.19 11:08	
Benzo(a)pyrene	0.0107	0.0333	0.0367	78	0.0444	101	50-128	19	25	mg/kg	11.07.19 11:08	
Benzo(b)fluoranthene	0.0163	0.0333	0.0383	66	0.0468	92	49-137	20	25	mg/kg	11.07.19 11:08	
Benzo(g,h,i)perylene	0.0157	0.0333	0.0364	62	0.0435	83	47-132	18	25	mg/kg	11.07.19 11:08	
Benzo(k)fluoranthene	<0.00834	0.0333	0.0341	102	0.0387	116	48-133	13	25	mg/kg	11.07.19 11:08	
Chrysene	0.00933	0.0333	0.0333	72	0.0405	94	54-113	20	25	mg/kg	11.07.19 11:08	
Dibenz(a,h)Anthracene	<0.00834	0.0333	0.0307	92	0.0310	93	48-133	1	25	mg/kg	11.07.19 11:08	
Fluoranthene	0.0194	0.0333	0.0438	73	0.0675	144	54-128	43	25	mg/kg	11.07.19 11:08	XF
Fluorene	<0.00834	0.0333	0.0269	81	0.0282	85	44-118	5	25	mg/kg	11.07.19 11:08	
Indeno(1,2,3-c,d)Pyrene	0.0102	0.0333	0.0356	76	0.0407	92	49-129	13	25	mg/kg	11.07.19 11:08	
Naphthalene	<0.0834	0.0333	0.0268	80	0.0310	93	40-135	15	25	mg/kg	11.07.19 11:08	
Phenanthrene	0.00888	0.0333	0.0370	84	0.0634	164	44-119	53	25	mg/kg	11.07.19 11:08	XF
Pyrene	0.0238	0.0333	0.0475	71	0.0785	164	50-126	49	25	mg/kg	11.07.19 11:08	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	97		96		31-130	%	11.07.19 11:08
2-Fluorobiphenyl	105		102		51-133	%	11.07.19 11:08
Terphenyl-D14	112		110		46-137	%	11.07.19 11:08

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106739 Matrix: Soil Date Prep: 11.06.19

Parent Sample Id: 642000-015 MS Sample Id: 642000-015 S MSD Sample Id: 642000-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00833	0.0333	0.0263	79	0.0240	72	42-116	9	25	mg/kg	11.08.19 01:04	
Acenaphthylene	0.00936	0.0333	0.0401	92	0.0297	61	42-121	30	25	mg/kg	11.08.19 01:04	F
Anthracene	0.00878	0.0333	0.0391	91	0.0293	62	44-120	29	25	mg/kg	11.08.19 01:04	F
Benzo(a)anthracene	0.0242	0.0333	0.0606	109	0.0385	43	52-121	45	25	mg/kg	11.08.19 01:04	XF
Benzo(a)pyrene	0.0329	0.0333	0.0741	124	0.0439	33	50-128	51	25	mg/kg	11.08.19 01:04	XF
Benzo(b)fluoranthene	0.0454	0.0333	0.0962	153	0.0525	21	49-137	59	25	mg/kg	11.08.19 01:04	XF
Benzo(g,h,i)perylene	0.0228	0.0333	0.0394	50	0.0300	22	47-132	27	25	mg/kg	11.08.19 01:04	XF
Benzo(k)fluoranthene	0.00917	0.0333	0.0491	120	0.0376	85	48-133	27	25	mg/kg	11.08.19 01:04	F
Chrysene	0.0341	0.0333	0.0692	105	0.0450	33	54-113	42	25	mg/kg	11.08.19 01:04	XF
Dibenz(a,h)Anthracene	<0.00833	0.0333	0.0209	63	0.0209	63	48-133	0	25	mg/kg	11.08.19 01:04	
Fluoranthene	0.0644	0.0333	0.141	230	0.0625	0	54-128	77	25	mg/kg	11.08.19 01:04	XF
Fluorene	<0.00833	0.0333	0.0295	89	0.0257	77	44-118	14	25	mg/kg	11.08.19 01:04	
Indeno(1,2,3-c,d)Pyrene	0.0149	0.0333	0.0354	62	0.0262	34	49-129	30	25	mg/kg	11.08.19 01:04	XF
Naphthalene	0.00935	0.0333	0.0295	61	0.0271	53	40-135	8	25	mg/kg	11.08.19 01:04	
Phenanthrene	0.0504	0.0333	0.119	206	0.0544	12	44-119	75	25	mg/kg	11.08.19 01:04	XF
Pyrene	0.0776	0.0333	0.169	274	0.0713	0	50-126	81	25	mg/kg	11.08.19 01:04	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	95		84		31-130	%	11.08.19 01:04
2-Fluorobiphenyl	100		89		51-133	%	11.08.19 01:04
Terphenyl-D14	105		94		46-137	%	11.08.19 01:04

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106745 Matrix: Soil Date Prep: 11.06.19

Parent Sample Id: 642000-039 MS Sample Id: 642000-039 S MSD Sample Id: 642000-039 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00166	0.0333	0.0311	93	0.0278	83	42-116	11	25	mg/kg	11.06.19 22:51	
Acenaphthylene	<0.00166	0.0333	0.0307	92	0.0270	81	42-121	13	25	mg/kg	11.06.19 22:51	
Anthracene	<0.00166	0.0333	0.0328	98	0.0285	86	44-120	14	25	mg/kg	11.06.19 22:51	
Benzo(a)anthracene	<0.00166	0.0333	0.0346	104	0.0296	89	52-121	16	25	mg/kg	11.06.19 22:51	
Benzo(a)pyrene	<0.00166	0.0333	0.0354	106	0.0299	90	50-128	17	25	mg/kg	11.06.19 22:51	
Benzo(b)fluoranthene	<0.00166	0.0333	0.0373	112	0.0324	97	49-137	14	25	mg/kg	11.06.19 22:51	
Benzo(g,h,i)perylene	<0.00166	0.0333	0.0368	111	0.0301	90	47-132	20	25	mg/kg	11.06.19 22:51	
Benzo(k)fluoranthene	<0.00166	0.0333	0.0358	108	0.0300	90	48-133	18	25	mg/kg	11.06.19 22:51	
Chrysene	<0.00166	0.0333	0.0342	103	0.0287	86	54-113	17	25	mg/kg	11.06.19 22:51	
Dibenz(a,h)Anthracene	<0.00166	0.0333	0.0366	110	0.0315	95	48-133	15	25	mg/kg	11.06.19 22:51	
Fluoranthene	<0.00166	0.0333	0.0362	109	0.0307	92	54-128	16	25	mg/kg	11.06.19 22:51	
Fluorene	<0.00166	0.0333	0.0314	94	0.0281	84	44-118	11	25	mg/kg	11.06.19 22:51	
Indeno(1,2,3-c,d)Pyrene	<0.00166	0.0333	0.0372	112	0.0311	93	49-129	18	25	mg/kg	11.06.19 22:51	
Naphthalene	<0.0166	0.0333	0.0299	90	0.0267	80	40-135	11	25	mg/kg	11.06.19 22:51	
Phenanthrene	<0.00166	0.0333	0.0335	101	0.0292	88	44-119	14	25	mg/kg	11.06.19 22:51	
Pyrene	<0.00166	0.0333	0.0341	102	0.0290	87	50-126	16	25	mg/kg	11.06.19 22:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	119		106		31-130	%	11.06.19 22:51
2-Fluorobiphenyl	121		106		51-133	%	11.06.19 22:51
Terphenyl-D14	132		111		46-137	%	11.06.19 22:51

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: PAHs by SW846 8270D SIM Prep Method: SW3511

Seq Number: 3106671 Matrix: Water Date Prep: 11.05.19

MB Sample Id: 7689653-1-BLK LCS Sample Id: 7689653-1-BKS LCSD Sample Id: 7689653-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1-Methylnaphthalene	<0.000182	0.0182	0.0187	103	0.0203	112	70-126	8	30	mg/L	11.06.19 18:25	
2-Methylnaphthalene	<0.000182	0.0182	0.0182	100	0.0196	108	74-121	7	30	mg/L	11.06.19 18:25	
Acenaphthene	<0.000182	0.0182	0.0185	102	0.0200	110	75-127	8	30	mg/L	11.06.19 18:25	
Acenaphthylene	<0.000182	0.0182	0.0189	104	0.0203	112	78-133	7	30	mg/L	11.06.19 18:25	
Anthracene	<0.000182	0.0182	0.0193	106	0.0211	116	73-145	9	30	mg/L	11.06.19 18:25	
Benzo(a)anthracene	<0.000182	0.0182	0.0185	102	0.0199	109	77-131	7	30	mg/L	11.06.19 18:25	
Benzo(a)pyrene	<0.000182	0.0182	0.0171	94	0.0185	102	56-163	8	30	mg/L	11.06.19 18:25	
Benzo(b)fluoranthene	<0.000182	0.0182	0.0181	99	0.0191	105	74-138	5	30	mg/L	11.06.19 18:25	
Benzo(g,h,i)perylene	<0.000182	0.0182	0.0161	88	0.0175	96	77-127	8	30	mg/L	11.06.19 18:25	
Benzo(k)fluoranthene	<0.000182	0.0182	0.0156	86	0.0176	97	67-142	12	30	mg/L	11.06.19 18:25	
Chrysene	<0.000182	0.0182	0.0167	92	0.0177	97	66-126	6	30	mg/L	11.06.19 18:25	
Dibenz(a,h)anthracene	<0.000182	0.0182	0.0168	92	0.0182	100	71-142	8	30	mg/L	11.06.19 18:25	
Fluoranthene	<0.000182	0.0182	0.0197	108	0.0216	119	78-138	9	30	mg/L	11.06.19 18:25	
Fluorene	<0.000182	0.0182	0.0190	104	0.0205	113	79-128	8	30	mg/L	11.06.19 18:25	
Indeno(1,2,3-c,d)Pyrene	<0.000182	0.0182	0.0168	92	0.0182	100	76-140	8	30	mg/L	11.06.19 18:25	
Naphthalene	<0.000364	0.0182	0.0176	97	0.0191	105	72-122	8	30	mg/L	11.06.19 18:25	
Phenanthrene	<0.000182	0.0182	0.0189	104	0.0207	114	76-129	9	30	mg/L	11.06.19 18:25	
Pyrene	<0.000182	0.0182	0.0180	99	0.0194	107	74-138	7	30	mg/L	11.06.19 18:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	133		133		137		54-146	%	11.06.19 18:25
Nitrobenzene-d5	135		132		138		46-151	%	11.06.19 18:25
Terphenyl-D14	136		125		128		51-139	%	11.06.19 18:25

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by SW846 8270D SIM** Prep Method: SW3511

Seq Number: 3106671 Matrix: Water Date Prep: 11.05.19

Parent Sample Id: 642000-057 MS Sample Id: 642000-057 S MSD Sample Id: 642000-057 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1-Methylnaphthalene	<0.000188	0.0188	0.0211	112	0.0201	106	70-126	5	30	mg/L	11.06.19 19:15	
2-Methylnaphthalene	<0.000188	0.0188	0.0205	109	0.0194	102	74-121	6	30	mg/L	11.06.19 19:15	
Acenaphthene	<0.000188	0.0188	0.0208	111	0.0199	105	75-127	4	30	mg/L	11.06.19 19:15	
Acenaphthylene	<0.000188	0.0188	0.0211	112	0.0199	105	78-133	6	30	mg/L	11.06.19 19:15	
Anthracene	<0.000188	0.0188	0.0212	113	0.0204	107	73-145	4	30	mg/L	11.06.19 19:15	
Benzo(a)anthracene	<0.000188	0.0188	0.0169	90	0.0171	90	77-131	1	30	mg/L	11.06.19 19:15	
Benzo(a)pyrene	<0.000188	0.0188	0.0145	77	0.0154	81	56-163	6	30	mg/L	11.06.19 19:15	
Benzo(b)fluoranthene	<0.000188	0.0188	0.0161	86	0.0162	85	74-138	1	30	mg/L	11.06.19 19:15	
Benzo(g,h,i)perylene	<0.000188	0.0188	0.0131	70	0.0139	73	77-127	6	30	mg/L	11.06.19 19:15	X
Benzo(k)fluoranthene	<0.000188	0.0188	0.0122	65	0.0139	73	67-142	13	30	mg/L	11.06.19 19:15	X
Chrysene	<0.000188	0.0188	0.0146	78	0.0153	81	66-126	5	30	mg/L	11.06.19 19:15	
Dibenz(a,h)anthracene	<0.000188	0.0188	0.0132	70	0.0143	75	71-142	8	30	mg/L	11.06.19 19:15	X
Fluoranthene	<0.000188	0.0188	0.0211	112	0.0202	106	78-138	4	30	mg/L	11.06.19 19:15	
Fluorene	<0.000188	0.0188	0.0212	113	0.0201	106	79-128	5	30	mg/L	11.06.19 19:15	
Indeno(1,2,3-c,d)Pyrene	<0.000188	0.0188	0.0134	71	0.0144	76	76-140	7	30	mg/L	11.06.19 19:15	X
Naphthalene	<0.000376	0.0188	0.0199	106	0.0190	100	72-122	5	30	mg/L	11.06.19 19:15	
Phenanthrene	<0.000188	0.0188	0.0209	111	0.0199	105	76-129	5	30	mg/L	11.06.19 19:15	
Pyrene	<0.000188	0.0188	0.0196	104	0.0188	99	74-138	4	30	mg/L	11.06.19 19:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	137		130		54-146	%	11.06.19 19:15
Nitrobenzene-d5	142		134		46-151	%	11.06.19 19:15
Terphenyl-D14	100		105		51-139	%	11.06.19 19:15

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **TCLP VOCs by SW-846 8260C** Prep Method: SW5030B
Seq Number: 3106619 Matrix: Water Date Prep: 11.06.19
MB Sample Id: 7689730-1-BLK LCS Sample Id: 7689730-1-BKS LCSD Sample Id: 7689730-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00500	0.250	0.264	106	0.245	98	66-142	7	25	mg/L	11.06.19 11:08	
Methyl ethyl ketone	<0.250	1.25	1.19	95	1.28	102	60-140	7	25	mg/L	11.06.19 11:08	
Carbon Tetrachloride	<0.0250	0.250	0.308	123	0.284	114	62-125	8	25	mg/L	11.06.19 11:08	
Chlorobenzene	<0.00500	0.250	0.251	100	0.238	95	60-133	5	25	mg/L	11.06.19 11:08	
Chloroform	<0.00500	0.250	0.280	112	0.265	106	70-130	6	25	mg/L	11.06.19 11:08	
1,4-Dichlorobenzene	<0.00500	0.250	0.263	105	0.250	100	75-125	5	25	mg/L	11.06.19 11:08	
1,2-Dichloroethane	<0.00500	0.250	0.273	109	0.262	105	68-127	4	25	mg/L	11.06.19 11:08	
1,1-Dichloroethene	<0.00500	0.250	0.308	123	0.284	114	59-172	8	25	mg/L	11.06.19 11:08	
Tetrachloroethylene	<0.00500	0.250	0.284	114	0.265	106	71-125	7	25	mg/L	11.06.19 11:08	
Trichloroethylene	<0.0250	0.250	0.255	102	0.243	97	62-137	5	25	mg/L	11.06.19 11:08	
Vinyl Chloride	<0.0100	0.250	0.270	108	0.265	106	60-140	2	25	mg/L	11.06.19 11:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	93		108		108		75-131	%	11.06.19 11:08
1,2-Dichloroethane-D4	92		105		106		63-144	%	11.06.19 11:08
Toluene-D8	97		98		100		80-117	%	11.06.19 11:08
4-Bromofluorobenzene	102		102		98		74-124	%	11.06.19 11:08

Analytical Method: **TCLP VOCs by SW-846 8260C** Prep Method: SW5030B
Seq Number: 3106619 Matrix: Product Date Prep: 11.06.19
Parent Sample Id: 641812-006 MS Sample Id: 641812-006 S MSD Sample Id: 641812-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0500	2.50	2.62	105	2.64	106	66-142	1	25	mg/L	11.06.19 11:54	
Methyl ethyl ketone	<2.50	12.5	12.2	98	12.5	100	60-140	2	25	mg/L	11.06.19 11:54	
Carbon Tetrachloride	<0.250	2.50	3.05	122	2.97	119	62-125	3	25	mg/L	11.06.19 11:54	
Chlorobenzene	<0.0500	2.50	2.49	100	2.40	96	60-133	4	25	mg/L	11.06.19 11:54	
Chloroform	<0.0500	2.50	2.75	110	2.66	106	70-130	3	25	mg/L	11.06.19 11:54	
1,4-Dichlorobenzene	<0.0500	2.50	2.53	101	2.39	96	75-125	6	25	mg/L	11.06.19 11:54	
1,2-Dichloroethane	<0.0500	2.50	2.66	106	2.74	110	68-127	3	25	mg/L	11.06.19 11:54	
1,1-Dichloroethene	<0.0500	2.50	3.05	122	2.87	115	59-172	6	25	mg/L	11.06.19 11:54	
Tetrachloroethylene	<0.0500	2.50	2.69	108	2.60	104	71-125	3	25	mg/L	11.06.19 11:54	
Trichloroethylene	<0.250	2.50	2.47	99	2.59	104	62-137	5	25	mg/L	11.06.19 11:54	
Vinyl Chloride	<0.100	2.50	2.56	102	2.52	101	60-140	2	25	mg/L	11.06.19 11:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	107		108		75-131	%	11.06.19 11:54
1,2-Dichloroethane-D4	107		111		63-144	%	11.06.19 11:54
Toluene-D8	101		103		80-117	%	11.06.19 11:54
4-Bromofluorobenzene	100		100		74-124	%	11.06.19 11:54

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3106574 Matrix: Water Date Prep: 11.05.19

MB Sample Id: 7689701-1-BLK LCS Sample Id: 7689701-1-BKS LCSD Sample Id: 7689701-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetone	<0.100	0.250	0.312	125	0.243	97	60-140	25	25	mg/L	11.05.19 09:30	
Benzene	<0.00100	0.0500	0.0510	102	0.0483	97	66-142	5	25	mg/L	11.05.19 09:30	
Bromobenzene	<0.00100	0.0500	0.0460	92	0.0456	91	75-125	1	25	mg/L	11.05.19 09:30	
Bromochloromethane	<0.00100	0.0500	0.0513	103	0.0481	96	60-140	6	25	mg/L	11.05.19 09:30	
Bromodichloromethane	<0.00100	0.0500	0.0511	102	0.0479	96	75-125	6	25	mg/L	11.05.19 09:30	
Bromoform	<0.00500	0.0500	0.0510	102	0.0511	102	75-125	0	25	mg/L	11.05.19 09:30	
Methyl bromide	<0.00500	0.0500	0.0514	103	0.0460	92	60-140	11	25	mg/L	11.05.19 09:30	
Methyl ethyl ketone	<0.0500	0.250	0.267	107	0.237	95	60-140	12	25	mg/L	11.05.19 09:30	
n-Butylbenzene	<0.00100	0.0500	0.0490	98	0.0481	96	75-125	2	25	mg/L	11.05.19 09:30	
Sec-Butylbenzene	<0.00100	0.0500	0.0512	102	0.0488	98	75-125	5	25	mg/L	11.05.19 09:30	
tert-Butylbenzene	<0.00100	0.0500	0.0492	98	0.0476	95	75-125	3	25	mg/L	11.05.19 09:30	
Carbon Disulfide	<0.00500	0.0500	0.0509	102	0.0463	93	60-140	9	25	mg/L	11.05.19 09:30	
Carbon Tetrachloride	<0.00500	0.0500	0.0578	116	0.0522	104	62-125	10	25	mg/L	11.05.19 09:30	
Chlorobenzene	<0.00100	0.0500	0.0475	95	0.0463	93	60-133	3	25	mg/L	11.05.19 09:30	
Chloroethane	<0.0100	0.0500	0.0527	105	0.0470	94	60-140	11	25	mg/L	11.05.19 09:30	
Chloroform	<0.00100	0.0500	0.0522	104	0.0476	95	70-130	9	25	mg/L	11.05.19 09:30	
1-Chlorohexane	<0.00500	0.0500	0.0481	96	0.0467	93	60-140	3	25	mg/L	11.05.19 09:30	
Methyl Chloride	<0.0100	0.0500	0.0507	101	0.0457	91	60-140	10	25	mg/L	11.05.19 09:30	
2-Chlorotoluene	<0.00100	0.0500	0.0481	96	0.0455	91	73-125	6	25	mg/L	11.05.19 09:30	
4-Chlorotoluene	<0.00100	0.0500	0.0473	95	0.0454	91	74-125	4	25	mg/L	11.05.19 09:30	
Cyclohexane	<0.00500	0.0500	0.0567	113	0.0513	103	70-130	10	25	mg/L	11.05.19 09:30	
p-Cymene (p-Isopropyltoluene)	<0.00100	0.0500	0.0500	100	0.0492	98	75-125	2	25	mg/L	11.05.19 09:30	
Dibromochloromethane	<0.00500	0.0500	0.0528	106	0.0520	104	73-125	2	25	mg/L	11.05.19 09:30	
1,2-Dibromo-3-Chloropropane	<0.00100	0.0500	0.0428	86	0.0438	88	59-125	2	25	mg/L	11.05.19 09:30	
1,2-Dibromoethane	<0.00500	0.0500	0.0508	102	0.0499	100	73-125	2	25	mg/L	11.05.19 09:30	
Methylene Bromide	<0.00100	0.0500	0.0476	95	0.0451	90	69-127	5	25	mg/L	11.05.19 09:30	
1,2-Dichlorobenzene	<0.00100	0.0500	0.0468	94	0.0463	93	75-125	1	25	mg/L	11.05.19 09:30	
1,3-Dichlorobenzene	<0.00100	0.0500	0.0484	97	0.0470	94	75-125	3	25	mg/L	11.05.19 09:30	
1,4-Dichlorobenzene	<0.00100	0.0500	0.0474	95	0.0462	92	75-125	3	25	mg/L	11.05.19 09:30	
Dichlorodifluoromethane	<0.00100	0.0500	0.0554	111	0.0487	97	60-140	13	25	mg/L	11.05.19 09:30	
1,1-Dichloroethane	<0.00100	0.0500	0.0513	103	0.0471	94	72-125	9	25	mg/L	11.05.19 09:30	
1,2-Dichloroethane	<0.00100	0.0500	0.0479	96	0.0448	90	68-127	7	25	mg/L	11.05.19 09:30	
1,1-Dichloroethene	<0.00100	0.0500	0.0524	105	0.0482	96	59-172	8	25	mg/L	11.05.19 09:30	
cis-1,2-Dichloroethylene	<0.00100	0.0500	0.0519	104	0.0480	96	75-125	8	25	mg/L	11.05.19 09:30	
trans-1,2-dichloroethylene	<0.00100	0.0500	0.0524	105	0.0482	96	75-125	8	25	mg/L	11.05.19 09:30	
1,2-Dichloropropane	<0.00500	0.0500	0.0510	102	0.0482	96	74-125	6	25	mg/L	11.05.19 09:30	
1,3-Dichloropropane	<0.00500	0.0500	0.0503	101	0.0494	99	75-125	2	25	mg/L	11.05.19 09:30	
2,2-Dichloropropane	<0.00500	0.0500	0.0570	114	0.0510	102	75-125	11	25	mg/L	11.05.19 09:30	
1,1-Dichloropropene	<0.00500	0.0500	0.0556	111	0.0508	102	75-125	9	25	mg/L	11.05.19 09:30	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0537	107	0.0505	101	74-125	6	25	mg/L	11.05.19 09:30	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0521	104	0.0510	102	66-125	2	25	mg/L	11.05.19 09:30	
Ethylbenzene	<0.00100	0.0500	0.0487	97	0.0468	94	75-125	4	25	mg/L	11.05.19 09:30	
Hexachlorobutadiene	<0.00500	0.0500	0.0496	99	0.0520	104	75-125	5	25	mg/L	11.05.19 09:30	
2-Hexanone	<0.0500	0.250	0.233	93	0.225	90	60-140	3	25	mg/L	11.05.19 09:30	
Isopropylbenzene	<0.00100	0.0500	0.0499	100	0.0475	95	75-125	5	25	mg/L	11.05.19 09:30	
Methylcyclohexane	<0.0100	0.0500	0.0522	104	0.0484	97	75-125	8	25	mg/L	11.05.19 09:30	
Methylene Chloride	<0.0100	0.0500	0.0471	94	0.0444	89	75-125	6	25	mg/L	11.05.19 09:30	
Methyl iodide	<0.0200	0.0500	0.0551	110	0.0506	101	75-125	9	25	mg/L	11.05.19 09:30	
4-Methyl-2-Pentanone	<0.0500	0.250	0.234	94	0.233	93	60-140	0	25	mg/L	11.05.19 09:30	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3106574 Matrix: Water Date Prep: 11.05.19

MB Sample Id: 7689701-1-BLK LCS Sample Id: 7689701-1-BKS LCSD Sample Id: 7689701-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.00500	0.0500	0.0516	103	0.0510	102	65-135	1	25	mg/L	11.05.19 09:30	
Naphthalene	<0.0100	0.0500	0.0467	93	0.0480	96	70-130	3	25	mg/L	11.05.19 09:30	
n-Propylbenzene	<0.00100	0.0500	0.0489	98	0.0455	91	75-125	7	25	mg/L	11.05.19 09:30	
Styrene	<0.00100	0.0500	0.0509	102	0.0483	97	75-125	5	25	mg/L	11.05.19 09:30	
1,1,1,2-Tetrachloroethane	<0.00100	0.0500	0.0502	100	0.0500	100	72-125	0	25	mg/L	11.05.19 09:30	
1,1,2,2-Tetrachloroethane	<0.00100	0.0500	0.0459	92	0.0470	94	74-125	2	25	mg/L	11.05.19 09:30	
Tetrachloroethene	<0.00100	0.0500	0.0490	98	0.0471	94	71-125	4	25	mg/L	11.05.19 09:30	
Toluene	<0.00100	0.0500	0.0482	96	0.0470	94	59-139	3	25	mg/L	11.05.19 09:30	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0466	93	0.0480	96	75-137	3	25	mg/L	11.05.19 09:30	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0465	93	0.0456	91	75-135	2	25	mg/L	11.05.19 09:30	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0548	110	0.0504	101	75-125	8	25	mg/L	11.05.19 09:30	
1,1,2-Trichloroethane	<0.00100	0.0500	0.0505	101	0.0503	101	75-127	0	25	mg/L	11.05.19 09:30	
Trichloroethylene	<0.00500	0.0500	0.0514	103	0.0487	97	62-137	5	25	mg/L	11.05.19 09:30	
Trichlorofluoromethane	<0.00100	0.0500	0.0535	107	0.0470	94	60-140	13	25	mg/L	11.05.19 09:30	
1,2,3-Trichloropropane	<0.00100	0.0500	0.0453	91	0.0448	90	75-125	1	25	mg/L	11.05.19 09:30	
1,2,4-Trimethylbenzene	<0.00100	0.0500	0.0464	93	0.0460	92	75-125	1	25	mg/L	11.05.19 09:30	
1,3,5-Trimethylbenzene	<0.00100	0.0500	0.0482	96	0.0467	93	70-125	3	25	mg/L	11.05.19 09:30	
o-Xylene	<0.00100	0.0500	0.0494	99	0.0476	95	75-125	4	25	mg/L	11.05.19 09:30	
m,p-Xylenes	<0.0100	0.100	0.0987	99	0.0942	94	75-125	5	25	mg/L	11.05.19 09:30	
Vinyl Acetate	<0.0500	0.250	0.273	109	0.262	105	60-140	4	25	mg/L	11.05.19 09:30	
Vinyl Chloride	<0.00200	0.0500	0.0557	111	0.0492	98	60-140	12	25	mg/L	11.05.19 09:30	
1,3-Butadiene	<0.00100	0.0500	0.0534	107	0.0476	95	70-150	11	25	mg/L	11.05.19 09:30	
Dicyclopentadiene	<0.00500	0.0500	0.0481	96	0.0471	94	70-120	2	25	mg/L	11.05.19 09:30	
n-Hexane	<0.00500	0.0500	0.0565	113	0.0527	105	72-125	7	25	mg/L	11.05.19 09:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	103		106		102		75-131	%	11.05.19 09:30
1,2-Dichloroethane-D4	107		99		98		63-144	%	11.05.19 09:30
Toluene-D8	97		98		100		80-117	%	11.05.19 09:30
4-Bromofluorobenzene	100		97		98		74-124	%	11.05.19 09:30

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3106574 Matrix: Water Date Prep: 11.05.19

Parent Sample Id: 641836-001 MS Sample Id: 641836-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<0.100	0.250	0.195	78	60-140	mg/L	11.05.19 19:34	
Benzene	0.00125	0.0500	0.0491	96	66-142	mg/L	11.05.19 19:34	
Bromobenzene	<0.00100	0.0500	0.0426	85	75-125	mg/L	11.05.19 19:34	
Bromochloromethane	<0.00100	0.0500	0.0467	93	60-140	mg/L	11.05.19 19:34	
Bromodichloromethane	<0.00100	0.0500	0.0475	95	75-125	mg/L	11.05.19 19:34	
Bromoform	<0.00500	0.0500	0.0457	91	75-125	mg/L	11.05.19 19:34	
Methyl bromide	<0.00500	0.0500	0.0467	93	60-140	mg/L	11.05.19 19:34	
Methyl ethyl ketone	<0.0500	0.250	0.217	87	60-140	mg/L	11.05.19 19:34	
n-Butylbenzene	<0.00100	0.0500	0.0432	86	75-125	mg/L	11.05.19 19:34	
Sec-Butylbenzene	<0.00100	0.0500	0.0459	92	75-125	mg/L	11.05.19 19:34	
tert-Butylbenzene	<0.00100	0.0500	0.0448	90	75-125	mg/L	11.05.19 19:34	
Carbon Disulfide	<0.00500	0.0500	0.0409	82	60-140	mg/L	11.05.19 19:34	
Carbon Tetrachloride	<0.00500	0.0500	0.0507	101	62-125	mg/L	11.05.19 19:34	
Chlorobenzene	<0.00100	0.0500	0.0443	89	60-133	mg/L	11.05.19 19:34	
Chloroethane	<0.0100	0.0500	0.0446	89	60-140	mg/L	11.05.19 19:34	
Chloroform	<0.00100	0.0500	0.0486	97	70-130	mg/L	11.05.19 19:34	
1-Chlorohexane	<0.00500	0.0500	0.0428	86	60-140	mg/L	11.05.19 19:34	
Methyl Chloride	<0.0100	0.0500	0.0452	90	60-140	mg/L	11.05.19 19:34	
2-Chlorotoluene	<0.00100	0.0500	0.0433	87	73-125	mg/L	11.05.19 19:34	
4-Chlorotoluene	<0.00100	0.0500	0.0429	86	74-125	mg/L	11.05.19 19:34	
Cyclohexane	<0.00500	0.0500	0.0478	96	70-130	mg/L	11.05.19 19:34	
p-Cymene (p-Isopropyltoluene)	<0.00100	0.0500	0.0445	89	75-125	mg/L	11.05.19 19:34	
Dibromochloromethane	<0.00500	0.0500	0.0478	96	73-125	mg/L	11.05.19 19:34	
1,2-Dibromo-3-Chloropropane	<0.00100	0.0500	0.0372	74	59-125	mg/L	11.05.19 19:34	
1,2-Dibromoethane	<0.00500	0.0500	0.0458	92	73-125	mg/L	11.05.19 19:34	
Methylene Bromide	<0.00100	0.0500	0.0444	89	69-127	mg/L	11.05.19 19:34	
1,2-Dichlorobenzene	<0.00100	0.0500	0.0432	86	75-125	mg/L	11.05.19 19:34	
1,3-Dichlorobenzene	<0.00100	0.0500	0.0434	87	75-125	mg/L	11.05.19 19:34	
1,4-Dichlorobenzene	<0.00100	0.0500	0.0430	86	75-125	mg/L	11.05.19 19:34	
Dichlorodifluoromethane	<0.00100	0.0500	0.0398	80	60-140	mg/L	11.05.19 19:34	
1,1-Dichloroethane	<0.00100	0.0500	0.0479	96	72-125	mg/L	11.05.19 19:34	
1,2-Dichloroethane	0.000860	0.0500	0.0460	90	68-127	mg/L	11.05.19 19:34	
1,1-Dichloroethene	<0.00100	0.0500	0.0455	91	59-172	mg/L	11.05.19 19:34	
cis-1,2-Dichloroethylene	<0.00100	0.0500	0.0485	97	75-125	mg/L	11.05.19 19:34	
trans-1,2-dichloroethylene	<0.00100	0.0500	0.0465	93	75-125	mg/L	11.05.19 19:34	
1,2-Dichloropropane	<0.00500	0.0500	0.0484	97	74-125	mg/L	11.05.19 19:34	
1,3-Dichloropropane	<0.00500	0.0500	0.0464	93	75-125	mg/L	11.05.19 19:34	
2,2-Dichloropropane	<0.00500	0.0500	0.0496	99	75-125	mg/L	11.05.19 19:34	
1,1-Dichloropropene	<0.00500	0.0500	0.0490	98	75-125	mg/L	11.05.19 19:34	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0487	97	74-125	mg/L	11.05.19 19:34	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0466	93	66-125	mg/L	11.05.19 19:34	
Ethylbenzene	<0.00100	0.0500	0.0440	88	75-125	mg/L	11.05.19 19:34	
Hexachlorobutadiene	<0.00500	0.0500	0.0410	82	75-125	mg/L	11.05.19 19:34	
2-Hexanone	<0.0500	0.250	0.210	84	60-140	mg/L	11.05.19 19:34	
Isopropylbenzene	<0.00100	0.0500	0.0448	90	75-125	mg/L	11.05.19 19:34	
Methylcyclohexane	<0.0100	0.0500	0.0438	88	75-125	mg/L	11.05.19 19:34	
Methylene Chloride	<0.0100	0.0500	0.0436	87	75-125	mg/L	11.05.19 19:34	
Methyl iodide	<0.0200	0.0500	0.0271	54	75-125	mg/L	11.05.19 19:34	X
4-Methyl-2-Pentanone	<0.0500	0.250	0.227	91	60-140	mg/L	11.05.19 19:34	

MS/MSD Percent Recovery	[D] = 100*(C-A) / B	LCS = Laboratory Control Sample	MS = Matrix Spike
Relative Percent Difference	RPD = 200* | (C-E) / (C+E) |	A = Parent Result	B = Spike Added
LCS/LCSD Recovery	[D] = 100 * (C) / [B]	C = MS/LCS Result	D = MSD/LCSD % Rec
Log Difference	Log Diff. = Log(Sample Duplicate) - Log(Original Sample)	E = MSD/LCSD Result	

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3106574 Matrix: Water Date Prep: 11.05.19

Parent Sample Id: 641836-001 MS Sample Id: 641836-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
MTBE	<0.00500	0.0500	0.0486	97	65-135	mg/L	11.05.19 19:34	
Naphthalene	<0.0100	0.0500	0.0377	75	70-130	mg/L	11.05.19 19:34	
n-Propylbenzene	<0.00100	0.0500	0.0435	87	75-125	mg/L	11.05.19 19:34	
Styrene	<0.00100	0.0500	0.0456	91	75-125	mg/L	11.05.19 19:34	
1,1,1,2-Tetrachloroethane	<0.00100	0.0500	0.0462	92	72-125	mg/L	11.05.19 19:34	
1,1,2,2-Tetrachloroethane	<0.00100	0.0500	0.0432	86	74-125	mg/L	11.05.19 19:34	
Tetrachloroethene	<0.00100	0.0500	0.0424	85	71-125	mg/L	11.05.19 19:34	
Toluene	<0.00100	0.0500	0.0444	89	59-139	mg/L	11.05.19 19:34	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0354	71	75-137	mg/L	11.05.19 19:34	X
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0387	77	75-135	mg/L	11.05.19 19:34	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0501	100	75-125	mg/L	11.05.19 19:34	
1,1,2-Trichloroethane	<0.00100	0.0500	0.0476	95	75-127	mg/L	11.05.19 19:34	
Trichloroethylene	<0.00500	0.0500	0.0469	94	62-137	mg/L	11.05.19 19:34	
Trichlorofluoromethane	<0.00100	0.0500	0.0448	90	60-140	mg/L	11.05.19 19:34	
1,2,3-Trichloropropane	<0.00100	0.0500	0.0422	84	75-125	mg/L	11.05.19 19:34	
1,2,4-Trimethylbenzene	<0.00100	0.0500	0.0424	85	75-125	mg/L	11.05.19 19:34	
1,3,5-Trimethylbenzene	<0.00100	0.0500	0.0436	87	70-125	mg/L	11.05.19 19:34	
o-Xylene	<0.00100	0.0500	0.0453	91	75-125	mg/L	11.05.19 19:34	
m,p-Xylenes	<0.0100	0.100	0.0892	89	75-125	mg/L	11.05.19 19:34	
Vinyl Acetate	<0.0500	0.250	0.240	96	60-140	mg/L	11.05.19 19:34	
Vinyl Chloride	<0.00200	0.0500	0.0458	92	60-140	mg/L	11.05.19 19:34	
1,3-Butadiene	<0.00100	0.0500	0.0417	83	70-150	mg/L	11.05.19 19:34	
Dicyclopentadiene	<0.00500	0.0500	0.0431	86	70-120	mg/L	11.05.19 19:34	
n-Hexane	<0.00500	0.0500	0.0446	89	72-125	mg/L	11.05.19 19:34	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
Dibromofluoromethane	106		75-131	%	11.05.19 19:34
1,2-Dichloroethane-D4	102		63-144	%	11.05.19 19:34
Toluene-D8	98		80-117	%	11.05.19 19:34
4-Bromofluorobenzene	96		74-124	%	11.05.19 19:34

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Final 1.000

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106502 Matrix: Solid Date Prep: 11.05.19

MB Sample Id: 7689655-1-BLK LCS Sample Id: 7689655-1-BKS LCSD Sample Id: 7689655-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0489	98	0.0505	101	72-125	3	25	mg/kg	11.05.19 10:46	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0476	95	0.0491	98	75-125	3	25	mg/kg	11.05.19 10:46	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0485	97	0.0491	98	74-125	1	25	mg/kg	11.05.19 10:46	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0490	98	0.0494	99	75-127	1	25	mg/kg	11.05.19 10:46	
1,1-Dichloroethane	<0.00500	0.0500	0.0485	97	0.0503	101	72-125	4	25	mg/kg	11.05.19 10:46	
1,1-Dichloroethene	<0.00500	0.0500	0.0511	102	0.0524	105	59-172	3	25	mg/kg	11.05.19 10:46	
1,1-Dichloropropene	<0.00500	0.0500	0.0506	101	0.0523	105	75-125	3	25	mg/kg	11.05.19 10:46	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0482	96	0.0508	102	75-137	5	25	mg/kg	11.05.19 10:46	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0474	95	0.0483	97	75-125	2	25	mg/kg	11.05.19 10:46	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0499	100	0.0521	104	75-135	4	25	mg/kg	11.05.19 10:46	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0478	96	0.0489	98	75-125	2	25	mg/kg	11.05.19 10:46	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0441	88	0.0448	90	59-125	2	25	mg/kg	11.05.19 10:46	
1,2-Dibromoethane	<0.00500	0.0500	0.0480	96	0.0485	97	73-125	1	25	mg/kg	11.05.19 10:46	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0483	97	0.0501	100	75-125	4	25	mg/kg	11.05.19 10:46	
1,2-Dichloroethane	<0.00500	0.0500	0.0453	91	0.0462	92	68-127	2	25	mg/kg	11.05.19 10:46	
1,2-Dichloropropane	<0.00500	0.0500	0.0480	96	0.0487	97	74-125	1	25	mg/kg	11.05.19 10:46	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0514	103	0.0530	106	70-130	3	25	mg/kg	11.05.19 10:46	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0491	98	0.0500	100	75-125	2	25	mg/kg	11.05.19 10:46	
1,3-Dichloropropane	<0.00500	0.0500	0.0496	99	0.0504	101	75-125	2	25	mg/kg	11.05.19 10:46	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0486	97	0.0505	101	75-125	4	25	mg/kg	11.05.19 10:46	
2,2-Dichloropropane	<0.00500	0.0500	0.0489	98	0.0507	101	75-125	4	25	mg/kg	11.05.19 10:46	
2-Butanone	<0.0200	0.250	0.195	78	0.195	78	75-125	0	25	mg/kg	11.05.19 10:46	
2-Chlorotoluene	<0.00500	0.0500	0.0497	99	0.0514	103	73-125	3	25	mg/kg	11.05.19 10:46	
2-Hexanone	<0.0500	0.250	0.214	86	0.216	86	75-125	1	25	mg/kg	11.05.19 10:46	
4-Chlorotoluene	<0.00500	0.0500	0.0484	97	0.0500	100	74-125	3	25	mg/kg	11.05.19 10:46	
4-Methyl-2-Pentanone	<0.0500	0.250	0.225	90	0.225	90	60-140	0	25	mg/kg	11.05.19 10:46	
Acetone	<0.100	0.250	0.155	62	0.154	62	50-150	1	25	mg/kg	11.05.19 10:46	
Benzene	<0.00100	0.0500	0.0482	96	0.0491	98	66-142	2	25	mg/kg	11.05.19 10:46	
Bromobenzene	<0.00500	0.0500	0.0488	98	0.0506	101	75-125	4	25	mg/kg	11.05.19 10:46	
Bromochloromethane	<0.00500	0.0500	0.0460	92	0.0471	94	60-140	2	25	mg/kg	11.05.19 10:46	
Bromodichloromethane	<0.00500	0.0500	0.0469	94	0.0479	96	75-125	2	25	mg/kg	11.05.19 10:46	
Bromoform	<0.00500	0.0500	0.0495	99	0.0509	102	75-125	3	25	mg/kg	11.05.19 10:46	
Bromomethane	<0.00500	0.0500	0.0387	77	0.0405	81	60-140	5	25	mg/kg	11.05.19 10:46	
Carbon Disulfide	<0.00500	0.0500	0.0560	112	0.0581	116	60-140	4	25	mg/kg	11.05.19 10:46	
Carbon Tetrachloride	<0.00500	0.0500	0.0505	101	0.0525	105	62-125	4	25	mg/kg	11.05.19 10:46	
Chlorobenzene	<0.00500	0.0500	0.0485	97	0.0491	98	60-133	1	25	mg/kg	11.05.19 10:46	
Chloroethane	<0.0100	0.0500	0.0399	80	0.0416	83	60-140	4	25	mg/kg	11.05.19 10:46	
Chloroform	<0.00500	0.0500	0.0458	92	0.0471	94	74-125	3	25	mg/kg	11.05.19 10:46	
Chloromethane	<0.00500	0.0500	0.0454	91	0.0468	94	60-140	3	25	mg/kg	11.05.19 10:46	
cis-1,2-Dichloroethene	<0.00500	0.0500	0.0465	93	0.0475	95	75-125	2	25	mg/kg	11.05.19 10:46	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0496	99	0.0507	101	74-125	2	25	mg/kg	11.05.19 10:46	
Dibromochloromethane	<0.00500	0.0500	0.0490	98	0.0497	99	73-125	1	25	mg/kg	11.05.19 10:46	
Dibromomethane	<0.00500	0.0500	0.0471	94	0.0485	97	69-127	3	25	mg/kg	11.05.19 10:46	
Dichlorodifluoromethane	<0.00500	0.0500	0.0597	119	0.0619	124	65-135	4	25	mg/kg	11.05.19 10:46	
Ethylbenzene	<0.00100	0.0500	0.0490	98	0.0502	100	75-125	2	25	mg/kg	11.05.19 10:46	
Hexachlorobutadiene	<0.00500	0.0500	0.0532	106	0.0561	112	75-125	5	25	mg/kg	11.05.19 10:46	
Iodomethane (Methyl Iodide)	<0.0200	0.0500	0.0404	81	0.0417	83	75-125	3	25	mg/kg	11.05.19 10:46	
Isopropylbenzene	<0.00500	0.0500	0.0514	103	0.0527	105	75-125	2	25	mg/kg	11.05.19 10:46	
m,p-Xylenes	<0.00200	0.100	0.0994	99	0.100	100	75-125	1	25	mg/kg	11.05.19 10:46	

MS/MSD Percent Recovery	[D] = 100*(C-A) / B	LCS = Laboratory Control Sample	MS = Matrix Spike
Relative Percent Difference	RPD = 200* | (C-E) / (C+E) |	A = Parent Result	B = Spike Added
LCS/LCSD Recovery	[D] = 100 * (C) / [B]	C = MS/LCS Result	D = MSD/LCSD % Rec
Log Difference	Log Diff. = Log(Sample Duplicate) - Log(Original Sample)	E = MSD/LCSD Result	

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106502 Matrix: Solid Date Prep: 11.05.19

MB Sample Id: 7689655-1-BLK LCS Sample Id: 7689655-1-BKS LCSD Sample Id: 7689655-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Methylene Chloride	<0.0200	0.0500	0.0494	99	0.0508	102	75-125	3	25	mg/kg	11.05.19 10:46	
MTBE	<0.00500	0.0500	0.0449	90	0.0468	94	60-140	4	25	mg/kg	11.05.19 10:46	
Naphthalene	<0.0100	0.0500	0.0491	98	0.0522	104	70-130	6	25	mg/kg	11.05.19 10:46	
n-Butylbenzene	<0.00500	0.0500	0.0504	101	0.0523	105	75-125	4	25	mg/kg	11.05.19 10:46	
n-Propylbenzene	<0.00500	0.0500	0.0508	102	0.0524	105	75-125	3	25	mg/kg	11.05.19 10:46	
o-Xylene	<0.00100	0.0500	0.0501	100	0.0519	104	75-125	4	25	mg/kg	11.05.19 10:46	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0482	96	0.0497	99	75-125	3	25	mg/kg	11.05.19 10:46	
Sec-Butylbenzene	<0.00500	0.0500	0.0502	100	0.0519	104	75-125	3	25	mg/kg	11.05.19 10:46	
Styrene	<0.00500	0.0500	0.0490	98	0.0502	100	75-125	2	25	mg/kg	11.05.19 10:46	
tert-Butylbenzene	<0.00500	0.0500	0.0548	110	0.0568	114	75-125	4	25	mg/kg	11.05.19 10:46	
Tetrachloroethylene	<0.00500	0.0500	0.0533	107	0.0537	107	71-125	1	25	mg/kg	11.05.19 10:46	
Toluene	<0.00500	0.0500	0.0483	97	0.0495	99	59-139	2	25	mg/kg	11.05.19 10:46	
trans-1,2-dichloroethene	<0.00500	0.0500	0.0475	95	0.0502	100	75-125	6	25	mg/kg	11.05.19 10:46	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0495	99	0.0501	100	66-125	1	25	mg/kg	11.05.19 10:46	
Trichloroethene	<0.00500	0.0500	0.0446	89	0.0451	90	62-137	1	25	mg/kg	11.05.19 10:46	
Trichlorofluoromethane	<0.00500	0.0500	0.0451	90	0.0465	93	67-125	3	25	mg/kg	11.05.19 10:46	
Vinyl Acetate	<0.0100	0.250	0.198	79	0.201	80	60-140	2	25	mg/kg	11.05.19 10:46	
Vinyl Chloride	<0.00500	0.0500	0.0466	93	0.0482	96	60-140	3	25	mg/kg	11.05.19 10:46	
1,3-Butadiene	<0.00500	0.0500	0.0593	119	0.0633	127	70-130	7	25	mg/kg	11.05.19 10:46	
Cyclohexane	<0.00500	0.0500	0.0494	99	0.0512	102	70-130	4	25	mg/kg	11.05.19 10:46	
Dicyclopentadiene	<0.00500	0.0500	0.0445	89	0.0461	92	70-120	4	25	mg/kg	11.05.19 10:46	
Methylcyclohexane	<0.0100	0.0500	0.0522	104	0.0532	106	65-135	2	25	mg/kg	11.05.19 10:46	
n-Hexane	<0.0100	0.0500	0.0462	92	0.0476	95	72-125	3	25	mg/kg	11.05.19 10:46	
4-Ethyltoluene	<0.00500	0.0500	0.0507	101	0.0520	104	70-130	3	25	mg/kg	11.05.19 10:46	
Propene	<0.00500	0.0500	0.0389	78	0.0413	83	70-130	6	25	mg/kg	11.05.19 10:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	101		96		98		53-142	%	11.05.19 10:46
1,2-Dichloroethane-D4	102		101		100		56-150	%	11.05.19 10:46
Toluene-D8	102		102		101		70-130	%	11.05.19 10:46
4-Bromofluorobenzene	97		97		98		68-152	%	11.05.19 10:46

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3106502 Matrix: Soil Date Prep: 11.05.19

Parent Sample Id: 641856-005 MS Sample Id: 641856-005 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00470	0.0470	0.0432	92	72-125	mg/kg	11.05.19 11:32	
1,1,1-Trichloroethane	<0.00470	0.0470	0.0435	93	75-125	mg/kg	11.05.19 11:32	
1,1,2,2-Tetrachloroethane	<0.00470	0.0470	0.0450	96	74-125	mg/kg	11.05.19 11:32	
1,1,2-Trichloroethane	<0.00470	0.0470	0.0411	87	75-127	mg/kg	11.05.19 11:32	
1,1-Dichloroethane	<0.00470	0.0470	0.0435	93	72-125	mg/kg	11.05.19 11:32	
1,1-Dichloroethene	<0.00470	0.0470	0.0454	97	59-172	mg/kg	11.05.19 11:32	
1,1-Dichloropropene	<0.00470	0.0470	0.0454	97	75-125	mg/kg	11.05.19 11:32	
1,2,3-Trichlorobenzene	<0.00470	0.0470	0.0269	57	75-137	mg/kg	11.05.19 11:32	X
1,2,3-Trichloropropane	<0.00470	0.0470	0.0434	92	75-125	mg/kg	11.05.19 11:32	
1,2,4-Trichlorobenzene	<0.00470	0.0470	0.0300	64	75-135	mg/kg	11.05.19 11:32	X
1,2,4-Trimethylbenzene	<0.000239	0.0470	0.0441	94	75-125	mg/kg	11.05.19 11:32	
1,2-Dibromo-3-Chloropropane	<0.00470	0.0470	0.0398	85	59-125	mg/kg	11.05.19 11:32	
1,2-Dibromoethane	<0.00470	0.0470	0.0408	87	73-125	mg/kg	11.05.19 11:32	
1,2-Dichlorobenzene	<0.00470	0.0470	0.0399	85	75-125	mg/kg	11.05.19 11:32	
1,2-Dichloroethane	<0.00470	0.0470	0.0385	82	68-127	mg/kg	11.05.19 11:32	
1,2-Dichloropropane	<0.00470	0.0470	0.0420	89	74-125	mg/kg	11.05.19 11:32	
1,3,5-Trimethylbenzene	<0.00470	0.0470	0.0487	104	70-130	mg/kg	11.05.19 11:32	
1,3-Dichlorobenzene	<0.00470	0.0470	0.0419	89	75-125	mg/kg	11.05.19 11:32	
1,3-Dichloropropane	<0.00470	0.0470	0.0420	89	75-125	mg/kg	11.05.19 11:32	
1,4-Dichlorobenzene	<0.00470	0.0470	0.0411	87	75-125	mg/kg	11.05.19 11:32	
2,2-Dichloropropane	<0.00470	0.0470	0.0451	96	75-125	mg/kg	11.05.19 11:32	
2-Butanone	0.0138	0.235	0.161	63	75-125	mg/kg	11.05.19 11:32	X
2-Chlorotoluene	<0.00470	0.0470	0.0475	101	73-125	mg/kg	11.05.19 11:32	
2-Hexanone	<0.0470	0.235	0.171	73	75-125	mg/kg	11.05.19 11:32	X
4-Chlorotoluene	<0.00470	0.0470	0.0454	97	74-125	mg/kg	11.05.19 11:32	
4-Methyl-2-Pentanone	<0.0470	0.235	0.179	76	60-140	mg/kg	11.05.19 11:32	
Acetone	0.0602	0.235	0.155	40	50-150	mg/kg	11.05.19 11:32	X
Benzene	0.000874	0.0470	0.0430	90	66-142	mg/kg	11.05.19 11:32	
Bromobenzene	<0.00470	0.0470	0.0448	95	75-125	mg/kg	11.05.19 11:32	
Bromochloromethane	<0.00470	0.0470	0.0397	84	60-140	mg/kg	11.05.19 11:32	
Bromodichloromethane	<0.00470	0.0470	0.0401	85	75-125	mg/kg	11.05.19 11:32	
Bromoform	<0.00470	0.0470	0.0408	87	75-125	mg/kg	11.05.19 11:32	
Bromomethane	<0.00470	0.0470	0.0386	82	60-140	mg/kg	11.05.19 11:32	
Carbon Disulfide	0.000644	0.0470	0.0509	107	60-140	mg/kg	11.05.19 11:32	
Carbon Tetrachloride	<0.00470	0.0470	0.0460	98	62-125	mg/kg	11.05.19 11:32	
Chlorobenzene	<0.00470	0.0470	0.0416	89	60-133	mg/kg	11.05.19 11:32	
Chloroethane	<0.00939	0.0470	0.0365	78	60-140	mg/kg	11.05.19 11:32	
Chloroform	<0.00470	0.0470	0.0409	87	74-125	mg/kg	11.05.19 11:32	
Chloromethane	<0.00470	0.0470	0.0441	94	60-140	mg/kg	11.05.19 11:32	
cis-1,2-Dichloroethene	<0.00470	0.0470	0.0409	87	75-125	mg/kg	11.05.19 11:32	
cis-1,3-Dichloropropene	<0.00470	0.0470	0.0416	89	74-125	mg/kg	11.05.19 11:32	
Dibromochloromethane	<0.00470	0.0470	0.0410	87	73-125	mg/kg	11.05.19 11:32	
Dibromomethane	<0.00470	0.0470	0.0390	83	69-127	mg/kg	11.05.19 11:32	
Dichlorodifluoromethane	<0.00470	0.0470	0.0536	114	65-135	mg/kg	11.05.19 11:32	
Ethylbenzene	<0.000315	0.0470	0.0436	93	75-125	mg/kg	11.05.19 11:32	
Hexachlorobutadiene	<0.00470	0.0470	0.0343	73	75-125	mg/kg	11.05.19 11:32	X
Iodomethane (Methyl Iodide)	<0.0188	0.0470	0.0364	77	75-125	mg/kg	11.05.19 11:32	
Isopropylbenzene	<0.00470	0.0470	0.0448	95	75-125	mg/kg	11.05.19 11:32	
m,p-Xylenes	<0.000410	0.0939	0.0870	93	75-125	mg/kg	11.05.19 11:32	

MS/MSD Percent Recovery	[D] = 100*(C-A) / B	LCS = Laboratory Control Sample	MS = Matrix Spike
Relative Percent Difference	RPD = 200* | (C-E) / (C+E) |	A = Parent Result	B = Spike Added
LCS/LCSD Recovery	[D] = 100 * (C) / [B]	C = MS/LCS Result	D = MSD/LCSD % Rec
Log Difference	Log Diff. = Log(Sample Duplicate) - Log(Original Sample)	E = MSD/LCSD Result	

QC Summary 642000

APS

APS MGP Douglas, AZ

Analytical Method: Volatiles by SW 8260C Prep Method: SW5035A

Seq Number: 3106502 Matrix: Soil Date Prep: 11.05.19

Parent Sample Id: 641856-005 MS Sample Id: 641856-005 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Methylene Chloride	<0.00396	0.0470	0.0458	97	75-125	mg/kg	11.05.19 11:32	
MTBE	<0.00470	0.0470	0.0382	81	60-140	mg/kg	11.05.19 11:32	
Naphthalene	<0.00188	0.0470	0.0304	65	70-130	mg/kg	11.05.19 11:32	X
n-Butylbenzene	<0.00470	0.0470	0.0439	93	75-125	mg/kg	11.05.19 11:32	
n-Propylbenzene	<0.00470	0.0470	0.0501	107	75-125	mg/kg	11.05.19 11:32	
o-Xylene	<0.000939	0.0470	0.0437	93	75-125	mg/kg	11.05.19 11:32	
p-Cymene (p-Isopropyltoluene)	<0.000299	0.0470	0.0433	92	75-125	mg/kg	11.05.19 11:32	
Sec-Butylbenzene	<0.00470	0.0470	0.0460	98	75-125	mg/kg	11.05.19 11:32	
Styrene	<0.00470	0.0470	0.0408	87	75-125	mg/kg	11.05.19 11:32	
tert-Butylbenzene	<0.00470	0.0470	0.0511	109	75-125	mg/kg	11.05.19 11:32	
Tetrachloroethylene	<0.00470	0.0470	0.0469	100	71-125	mg/kg	11.05.19 11:32	
Toluene	<0.000939	0.0470	0.0433	92	59-139	mg/kg	11.05.19 11:32	
trans-1,2-dichloroethene	<0.00470	0.0470	0.0431	92	75-125	mg/kg	11.05.19 11:32	
trans-1,3-dichloropropene	<0.00470	0.0470	0.0418	89	66-125	mg/kg	11.05.19 11:32	
Trichloroethene	<0.00470	0.0470	0.0397	84	62-137	mg/kg	11.05.19 11:32	
Trichlorofluoromethane	<0.00470	0.0470	0.0411	87	67-125	mg/kg	11.05.19 11:32	
Vinyl Acetate	<0.00939	0.235	0.0814	35	60-140	mg/kg	11.05.19 11:32	X
Vinyl Chloride	<0.00470	0.0470	0.0442	94	60-140	mg/kg	11.05.19 11:32	
1,3-Butadiene	<0.00470	0.0470	0.0546	116	70-130	mg/kg	11.05.19 11:32	
Cyclohexane	<0.00470	0.0470	0.0436	93	70-130	mg/kg	11.05.19 11:32	
Dicyclopentadiene	<0.00470	0.0470	0.0421	90	70-120	mg/kg	11.05.19 11:32	
Methylcyclohexane	<0.00939	0.0470	0.0436	93	65-135	mg/kg	11.05.19 11:32	
n-Hexane	<0.00939	0.0470	0.0383	81	72-125	mg/kg	11.05.19 11:32	
4-Ethyltoluene	<0.00470	0.0470	0.0489	104	70-130	mg/kg	11.05.19 11:32	
Propene	<0.00470	0.0470	0.0348	74	70-130	mg/kg	11.05.19 11:32	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
Dibromofluoromethane	98		53-142	%	11.05.19 11:32
1,2-Dichloroethane-D4	98		56-150	%	11.05.19 11:32
Toluene-D8	103		70-130	%	11.05.19 11:32
4-Bromofluorobenzene	106		68-152	%	11.05.19 11:32

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

Work Order No: 1642000

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Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
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Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:	Judith.Heywood@aps.com	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48 hr	
Sampler's Name:	A. Shwartz, M. Branche	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: 0.6	Corrected: 0.8	
Sample Custody Seals:	Yes No (N/A)			

Work Order Notes

IR ID:HOU-068 C/F:+0.2 Temp: 1.2 Corrected: 1.4
IR ID:HOU-068 C/F:+0.2 Temp: 2.1 Corrected: 2.3
IR ID:HOU-068 C/F:+0.2 Temp: 3.3 Corrected: 3.5
lab, if received by: ...

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B30-5.0-5.5	S	11-1-19	0850	5.0-5.5	4	X	X	X	X	X	X	X	X	possible lampblack
D-FD01-110119	S		0855	—	4	X	X	X	X	X	X	X	X	↓
D-B30-10.0-10.5	S		0910	10.0-10.5	1	X	X							
D-B30-15.0-15.5	S		0915	15.0-15.5	1	X	X							
D-B30-19.5-20.0	S		0930	19.5-20.0	1	X	X							
D-B21-2.5-3.0	S		1040	2.5-3.0	4	X	X	X	X	X	X	X	X	lamp black
D-FD02-110119	S		1045	—	4	X	X	X	X	X	X	X	X	↓
D-B21-5.0-5.5	S		1055	5.0-5.5	1	X	X							Lamp Black
D-B21-7.5-8.0	S		1115	7.5-8.0	1	X	X							Lamp Black?
D-B21-10.0-10.5	S	↓	1125	10.0-10.5		X	X							↓

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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1	FedEx	11-4-19 1300	2 FedEx		11.5.19 10:00
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 642000

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RR ☐ Superfun ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48hr	
Sampler's Name:	A. Shwartz, M Branche	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: 0.6	Corrected: 0.8	
Sample Custody Seals:	Yes No (N/A)			

IR ID:HOU-068 C/F:+0.2 Temp: 1.2 Corrected: 1.4
IR ID:HOU-068 C/F:+0.2 Temp: 2.1 Corrected: 2.3
IR ID:HOU-068 C/F:+0.2 Temp: 3.3 Corrected: 3.5
TAT starts the day ... lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B21-15.0-15.5	S	11-1-19	1135	15.0-15.5	1	X	X							lamp black
D-B21-19.5-20.0	S		1145	19.5-20.0	1	X	X							
D-B21-24.5-25.0	S		1305	24.5-25.0	1	X	X							
D-B15-1.0-1.5	S		1355	1.0-1.5	1	X	X							lamp black
D-B15-2.5-3.0	S		1410	2.5-3.0	1	X	X							MS/MSD
D-B15-5.0-5.5	S		1425	5.0-5.5	4	X	X	X	X	X	X	X	X	
D-FD03-110119	S		1435	—	4	X	X	X	X	X	X	X	X	
D-B15-7.5-8.0	S		1445	7.5-8.0	1	X	X							
D-B15-10.0-10.5	S		1450	10.0-10.5	1	X	X							
D-FD04-110119	S		1455	—	1	X	X							

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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[signature]	FedEx	11-4-19, 1300	2 FedEx	[signature]	11.5.19 1000
3			4		
5			6		

Revised Date 051418 Rev. 2018 1

Chain of Custody

Work Order No: 642000

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Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RR ☐ Superfur ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48hr	
Sampler's Name:	A. Shuman, M. Branche	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: 0.6	Corrected: 0.8	
Sample Custody Seals:	Yes No (N/A)			

IR ID:HOU-068 C/F:+0.2 Temp: 1.2 Corrected: 1.4
IR ID:HOU-068 C/F:+0.2 Temp: 2.1 Corrected: 2.3
IR ID:HOU-068 C/F:+0.2 Temp: 3.3 Corrected: 3.5
TAT starts the day received by the lab, if received by 4:30pm

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B15-14.5-15.0	S	11-1-19	1500	14.5-15.0	1	X	X							
D-TB01-110119	S W		0800	—	1			X						
D-B19-2.5-3.0	S		1540	2.5-3.0	2	X	X	X	X	X	X	X	X	lamp black
D-B19-5.0-5.5	S		1555	5.0-5.5	1	X	X							
D-B19-7.5-8.0	S		1605	7.5-8.0	1	X	X							
D-B19-10.0-10.5	S	11-2-19	0800	10.0-10.5	1	X	X							
D-B19-15.0-15.5	S		0810	15.0-15.5	1	X	X							
D-B19-19.5-20.0	S		0825	19.5-20.0	1	X	X							
D-B20-7.5-8.0	S		0925	7.5-8.0	1	X	X							
D-B20-9.5-10.0	S		0930	9.5-10.0	1	X	X							lamp black

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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[signature]	FedEx	11-4-19 1300	2 FedEx	[signature]	11519 10:00
3			4		
5			6		

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Chain of Custody

Work Order No: 604 2000

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Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48hr	
Sampler's Name:	A.Shwartz, M. Branche	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: 0.6	Corrected: 0.8	
Sample Custody Seals:	Yes No (N/A)			

IR ID:HOU-068 C/F:+0.2 Temp: 1.2 Corrected: 1.4
IR ID:HOU-068 C/F:+0.2 Temp: 2.1 Corrected: 2.3
IR ID:HOU-068 C/F:+0.2 Temp: 3.3 Corrected: 3.5
lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	TOTAL VOCS	TCLP VOCS	TCLP METALS	Sample Comments
D-B20-14.5-15.0	S	11-2-19	0945	14.5-15.0	1	X	X										lamp black?
D-B20-19.5-20.0	S	↓	0955	19.5-20.0	1	X	X										
D-TMR-01	S	11-2-19	0800	—										X	X	X	TMR
	S																
	S																
	S																
	S																
	S																

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx	11-4-19 1300	2 FedEx		11-5-19 1000
3			4		
5			6		

Chain of Custody

XENCO LABORATORIES

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Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: _____

www.xenco.com Page 5 of 8

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST☐ PRP☐ Brownfields☐ RR☐ Superfun☐
State of Project: Arizona
Reporting:Level II [X] Level III☐ PST/UST☐ TRRP☐ Level IV☐
Deliverables: EDD☐ ADaPT☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48 Hrs.	
Sampler's Name:	Jika D. Dinkelman	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068 C/F:+0.2 Temp: 0.6 Corrected: 0.8		
Cooler Custody Seals:	(Yes) No N/A			
Sample Custody Seals:	Yes No (N/A)			

IR ID:HOU-068 C/F:+0.2 Temp: 1.2 Corrected: 1.4
IR ID:HOU-068 C/F:+0.2 Temp: 2.1 Corrected: 2.3
IR ID:HOU-068 C/F:+0.2 Temp: 3.3 Corrected: 3.5

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	FOC (ASTM D4129-05)	Sample Comments
D-B26-40.0-40.5	S	11/2/19	14:30	40.0-40.5	1	X									
D-B27-2.5-3.0	S	11/3/19	10:00	2.5-3.0	2	X	X								
D-B27-5.0-5.5	S	11/3/19	10:10	5.0-5.5	2	X	X								
D-FD01-110319	S	11/3/19	10:05	N/A	2	X	X								
D-B27-7.5-8.0	S	11/3/19	15:15	7.5-8.0	2	X	X								
D-B27-10.0-10.5	S	11/3/19	15:35	10.0-10.5	5	X	X							X	MS/MSD
D-B27-15.0-15.5	S	11/3/19	15:55	15.0-15.5	2	X	X								
D-B27-20.0-20.5	S	11/3/19	16:20	20-20.5	3	X	X							X	
D-B27-25.0-25.5		11/3/19	16:30	25.0-25.5	2	X	X								
D-FD02-110319		11/3/19	16:35	N/A	2	X	X								

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx	11-4-19:1300	2 FedEx		11/5/19 1000
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Chain of Custody

Work Order No: 642000

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48 Hrs.	
Sampler's Name:	Ilka D. Dinkelman	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID:		
Received Intact:	(Yes) No			
Cooler Custody Seals:	(Yes) No N/A			
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

IR ID:HOU-068 C/F:+0.2
Temp: 0.6 Corrected: 0.8

IR ID:HOU-068 C/F:+0.2
Temp: 1.7 Corrected: 1.4

IR ID:HOU-068 C/F:+0.2
Temp: 2.1 Corrected: 2.3

IR ID:HOU-068 C/F:+0.2
Temp: 3.3 Corrected: 3.5

TAT starts the day recevied by the lab, if received by 4:30pm

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	FOC (ASTM D4129 - 05)						Sample Comments
D-B26-2.5-3.0	S	11/1/19	14:15	2.5-3.0	1	X	X													
D-FD05-110119	S	11/1/19	14:20	N/A	1	X	X													
D-B26-5.0-5.5	S	11/1/19	14:30	5.0-5.5	2	X	X							X						MS/MSD (Metals, PAH)
D-B26-7.5-8.0	S	11/2/19	9:50	7.5-8.0	2	X	X							X						
D-B26-10.0-10.5	S	11/2/19	10:15	10.0-10.5	2	X	X							X						MS/MSD (Metals, PAH)
D-B26-15.0-15.5	S	11/2/19	10:35	15.0-15.5	1	X	X													
D-B26-20.0-20.5	S	11/2/19	10:50	20.0-20.5	2	X	X							X						
D-B26-25.0-25.5	S	11/2/19	11:15	25.0-25.5	1	X	X													
D-FD01-110219		11/2/19	9:55	N/A	1	X	X													
D-B26-30.0-30.5		11/2/19	13:25	30-30.5	2	X								X						

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature]	FedEx	11-4-19;1300	2 FedEx	[signature]	11/5/19 1000
3			4		
5			6		

Revised Date 051418 Rev 2018.1

Chain of Custody

Work Order No: 642000

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:	Judith.Heywood@aps.com	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48 Hours	
Sampler's Name:	Jika D. Dinkelman	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	(Yes) No N/A	Temp: 0.6	Corrected: 0.8	
Sample Custody Seals:	Yes No (N/A)			

Work Order Notes

IR ID:HOU-068 C/F:+0.2 Temp: 1.2 Corrected: 1.4
IR ID:HOU-068 C/F:+0.2 Temp: 2.1 Corrected: 2.3
IR ID:HOU-068 C/F:+0.2 Temp: 3.3 Corrected: 3.5
TAT starts the day ... lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	FOC (ASTM D4129-05)	Sample Comments
D-B27-30.0-30.5	S	11/4/19	9:50	30-30.5	2	X								X	
D-B27-40.0-40.5	S	11/4/19	1105	40.0-40.5	1	X									
	S														
	S														
	S														
	S														
	S														
	S														

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx	11-4-19 1300	2 FedEx		11:5:19 1022
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

XENCO LABORATORIES

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Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
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Work Order No: 642000

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259	Email:	Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:

Reporting:Level II ☒ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine	☒
P.O. Number:	700735632	Rush:	X
Sampler's Name:	MATT BRANCHE	Due Date:	48 HRS

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Temperature (°C):		Thermometer ID		
Received Intact:	Yes No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	Yes No N/A	Temp: 0.6	Corrected: 0.8	
Sample Custody Seals:	Yes No N/A	Total Containers:		

IR ID:HOU-068 C/F:+0.2 Temp: 1.2 Corrected: 1.4

IR ID:HOU-068 C/F:+0.2 Temp: 2.1 Corrected: 2.3

IR ID:HOU-068 C/F:+0.2 Temp: 3.3 Corrected: 3.5

TAT starts the day recevied by the lab, if received by 4:30pm

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8310 PAHs	200.7 metals (8 RCRA)	8260B - Total VOCs (HCl preserved)	8021B - BTEX	Sample Comments
D-TB01-102919	W	—	—	—						
D-EB01-102919	W	10-29-19	1020	—	6	X	X	X	X	
D-EB01-102919	W	11-2-19	1550	—	6	X	X	X	X	
	W									
	W									
	W									
	W									
	W									

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx	11-4-19 1300	2 FedEx		11-5-19 1000
3			4		
5			6		

FedEx.
TRK# 0200 8125 9253 6325
TUE - 05 NOV
PRIORITY O/E
FedEx.
TRK# 0200 8125 9253 6314
TUE - 05 NOV
PRIORITY OVER
XH SGRA
HAL
FedEx.
TRK# 0200 8125 9253 6244
FID 3604368 04NOV19 AVWA 56AC1/F330/05A2
CUSTODY SEAL
DATE
SIGNATURE
11-4-19
FedEx.
TRK# 0200 8125 9253 6255
XH SGRA
FID 3604368 04NOV19 AVWA 56AC1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 11/05/2019 10:00:00 AM

Work Order #: 642000

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**Yes**	Limited sample for VOC analysis on sample ID#D-TAR-01 (033)
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: MDS

PH Device/Lot#: 10BDH0681

Checklist completed by: Monica Shakhshir Date: 11/05/2019

Checklist reviewed by: Ruriko Konuma Date: 11/05/2019

Analytical Report 642303

for

APS

Project Manager: Judy Heywood

APS MGP Douglas, AZ

D3118600.A.CS.EV.DG.05-18

11-NOV-19

Collected By: Client

4147 Greenbriar Dr.
Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

11-NOV-19

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: XENCO Report No(s): **642303**
APS MGP Douglas, AZ
Project Address:

Judy Heywood:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 642303. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 642303 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ruriko Konuma
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106889 PAHs by 8270D SIM

Surrogate 2-Fluorobiphenyl, Surrogate Nitrobenzene-d5 recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 642303-003,642303-005.

Batch: LBA-3106917 Metals, RCRA List, by SW 6020

Lab Sample ID 642303-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Barium, Silver recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642303-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014.

The Laboratory Control Sample for Silver, Barium is within laboratory Control Limits, therefore the data was accepted.

Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Sample Cross Reference 642303

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-B18-10.0-10.5	S	11-05-19 12:45	10.0 - 10.5	642303-001
D-B18-15.0-15.5	S	11-05-19 12:55	15.0 - 15.5	642303-002
D-B35-10.0-10.5	S	11-05-19 14:00	10.0 - 10.5	642303-003
D-B35-15.0-15.5	S	11-05-19 14:15	15.0 - 15.5	642303-004
D-B35-20.0-20.5	S	11-05-19 14:25	20.0 - 20.5	642303-005
D-B34-10.0-10.5	S	11-06-19 08:25	10.0 - 10.5	642303-006
D-B34-15.0-15.5	S	11-06-19 08:35	15.0 - 15.5	642303-007
D-B34-20.0-20.5	S	11-06-19 08:55	20.0 - 20.5	642303-008
D-B33-10.0-10.5	S	11-06-19 09:35	10.0 - 10.5	642303-009
D-B33-15.0-15.5	S	11-06-19 09:40	15.0 - 15.5	642303-010
D-B33-20.0-20.5	S	11-06-19 09:45	20.0 - 20.5	642303-011
D-B32-10.0-10.5	S	11-06-19 10:25	10.0 - 10.5	642303-012
D-B32-15.0-15.5	S	11-06-19 10:45	15.0 - 15.5	642303-013
D-B32-20.0-20.5	S	11-06-19 10:55	20.0 - 20.5	642303-014

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B18-10.0-10.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-001 Date Collected: 11.05.19 12.45 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.08.19 15.32	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**16.3**	1.89	mg/kg	11.08.19 15.54		10
Barium	7440-39-3	**39.5**	3.77	mg/kg	11.08.19 15.54		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.08.19 15.54	U	10
Chromium	7440-47-3	**8.93**	3.77	mg/kg	11.08.19 15.54		10
Lead	7439-92-1	**13.3**	1.89	mg/kg	11.08.19 15.54		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.08.19 15.54	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.08.19 15.54	U	10

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Sample Id:	**D-B18-10.0-10.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-001	Date Collected:	11.05.19 12.45	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 09.48	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.08.19 16.08	U	1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.08.19 16.08	U	1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.08.19 16.08	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	52	%	31-130	11.08.19 16.08	
2-Fluorobiphenyl	98	%	51-133	11.08.19 16.08	
Terphenyl-D14	93	%	46-137	11.08.19 16.08	

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Sample Id: **D-B18-15.0-15.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-002 Date Collected: 11.05.19 12.55 Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0382**	0.0182	mg/kg	11.08.19 15.45		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**18.3**	1.79	mg/kg	11.08.19 15.56		10
Barium	7440-39-3	**98.3**	3.57	mg/kg	11.08.19 15.56		10
Cadmium	7440-43-9	BRL	1.79	mg/kg	11.08.19 15.56	U	10
Chromium	7440-47-3	**12.3**	3.57	mg/kg	11.08.19 15.56		10
Lead	7439-92-1	**23.0**	1.79	mg/kg	11.08.19 15.56		10
Selenium	7782-49-2	BRL	1.79	mg/kg	11.08.19 15.56	U	10
Silver	7440-22-4	BRL	1.79	mg/kg	11.08.19 15.56	U	10

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Sample Id:	**D-B18-15.0-15.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-002	Date Collected:	11.05.19 12.55	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 09.51	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.08.19 16.25	U	1
Acenaphthylene	208-96-8	**0.00422**	0.00166	mg/kg	11.08.19 16.25		1
Anthracene	120-12-7	**0.00382**	0.00166	mg/kg	11.08.19 16.25		1
Benzo(a)anthracene	56-55-3	**0.0139**	0.00166	mg/kg	11.08.19 16.25		1
Benzo(a)pyrene	50-32-8	**0.0247**	0.00166	mg/kg	11.08.19 16.25		1
Benzo(b)fluoranthene	205-99-2	**0.0324**	0.00166	mg/kg	11.08.19 16.25		1
Benzo(g,h,i)perylene	191-24-2	**0.0211**	0.00166	mg/kg	11.08.19 16.25		1
Benzo(k)fluoranthene	207-08-9	**0.0106**	0.00166	mg/kg	11.08.19 16.25		1
Chrysene	218-01-9	**0.0188**	0.00166	mg/kg	11.08.19 16.25		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.08.19 16.25	U	1
Fluoranthene	206-44-0	**0.0418**	0.00166	mg/kg	11.08.19 16.25		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.08.19 16.25	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0163**	0.00166	mg/kg	11.08.19 16.25		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.08.19 16.25	U	1
Phenanthrene	85-01-8	**0.0221**	0.00166	mg/kg	11.08.19 16.25		1
Pyrene	129-00-0	**0.0508**	0.00166	mg/kg	11.08.19 16.25		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	57	%	31-130	11.08.19 16.25	
2-Fluorobiphenyl	96	%	51-133	11.08.19 16.25	
Terphenyl-D14	95	%	46-137	11.08.19 16.25	

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Sample Id: **D-B35-10.0-10.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-003 Date Collected: 11.05.19 14.00 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.08.19 15.46	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.6**	1.85	mg/kg	11.08.19 15.59		10
Barium	7440-39-3	**132**	3.70	mg/kg	11.08.19 15.59		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.08.19 15.59	U	10
Chromium	7440-47-3	**11.6**	3.70	mg/kg	11.08.19 15.59		10
Lead	7439-92-1	**24.1**	1.85	mg/kg	11.08.19 15.59		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.08.19 15.59	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.08.19 15.59	U	10

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Sample Id:	**D-B35-10.0-10.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-003	Date Collected:	11.05.19 14.00	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 09.54	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 16.40	U	1
Acenaphthylene	208-96-8	**0.0107**	0.00167	mg/kg	11.08.19 16.40		1
Anthracene	120-12-7	**0.00893**	0.00167	mg/kg	11.08.19 16.40		1
Benzo(a)anthracene	56-55-3	**0.0325**	0.00167	mg/kg	11.08.19 16.40		1
Benzo(a)pyrene	50-32-8	**0.0640**	0.00167	mg/kg	11.08.19 16.40		1
Benzo(b)fluoranthene	205-99-2	**0.0898**	0.00167	mg/kg	11.08.19 16.40		1
Benzo(g,h,i)perylene	191-24-2	**0.0502**	0.00167	mg/kg	11.08.19 16.40		1
Benzo(k)fluoranthene	207-08-9	**0.0255**	0.00167	mg/kg	11.08.19 16.40		1
Chrysene	218-01-9	**0.0474**	0.00167	mg/kg	11.08.19 16.40		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 16.40	U	1
Fluoranthene	206-44-0	**0.0934**	0.00167	mg/kg	11.08.19 16.40		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 16.40	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0390**	0.00167	mg/kg	11.08.19 16.40		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 16.40	U	1
Phenanthrene	85-01-8	**0.0408**	0.00167	mg/kg	11.08.19 16.40		1
Pyrene	129-00-0	**0.114**	0.00167	mg/kg	11.08.19 16.40		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	36	%	31-130	11.08.19 16.40	
2-Fluorobiphenyl	60	%	51-133	11.08.19 16.40	
Terphenyl-D14	88	%	46-137	11.08.19 16.40	

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Sample Id: **D-B35-15.0-15.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-004 Date Collected: 11.05.19 14.15 Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.08.19 16.02	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture: 0
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Dry Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**13.8**	1.85	mg/kg	11.08.19 15.30		10
Barium	7440-39-3	**170**	3.70	mg/kg	11.08.19 15.30		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.08.19 15.30	U	10
Chromium	7440-47-3	**12.8**	3.70	mg/kg	11.08.19 15.30		10
Lead	7439-92-1	**13.8**	1.85	mg/kg	11.08.19 15.30		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.08.19 15.30	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.08.19 15.30	U	10

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Sample Id:	**D-B35-15.0-15.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-004	Date Collected:	11.05.19 14.15	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 09.39	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 13.37	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.08.19 13.37	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.08.19 13.37	U	1
Benzo(a)anthracene	56-55-3	**0.00266**	0.00167	mg/kg	11.08.19 13.37		1
Benzo(a)pyrene	50-32-8	**0.00431**	0.00167	mg/kg	11.08.19 13.37		1
Benzo(b)fluoranthene	205-99-2	**0.00604**	0.00167	mg/kg	11.08.19 13.37		1
Benzo(g,h,i)perylene	191-24-2	**0.00598**	0.00167	mg/kg	11.08.19 13.37		1
Benzo(k)fluoranthene	207-08-9	**0.00187**	0.00167	mg/kg	11.08.19 13.37		1
Chrysene	218-01-9	**0.00352**	0.00167	mg/kg	11.08.19 13.37		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 13.37	U	1
Fluoranthene	206-44-0	**0.00772**	0.00167	mg/kg	11.08.19 13.37		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 13.37	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00395**	0.00167	mg/kg	11.08.19 13.37		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 13.37	U	1
Phenanthrene	85-01-8	**0.00383**	0.00167	mg/kg	11.08.19 13.37		1
Pyrene	129-00-0	**0.00917**	0.00167	mg/kg	11.08.19 13.37		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	82	%	31-130	11.08.19 13.37	
2-Fluorobiphenyl	97	%	51-133	11.08.19 13.37	
Terphenyl-D14	99	%	46-137	11.08.19 13.37	

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Sample Id: **D-B35-20.0-20.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-005 Date Collected: 11.05.19 14.25 Sample Depth: 20.0 - 20.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0261**	0.0167	mg/kg	11.08.19 15.48		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**14.2**	1.85	mg/kg	11.08.19 16.02		10
Barium	7440-39-3	**34.7**	3.70	mg/kg	11.08.19 16.02		10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.08.19 16.02	U	10
Chromium	7440-47-3	**12.7**	3.70	mg/kg	11.08.19 16.02		10
Lead	7439-92-1	**12.6**	1.85	mg/kg	11.08.19 16.02		10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.08.19 16.02	U	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.08.19 16.02	U	10

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Sample Id:	**D-B35-20.0-20.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-005	Date Collected:	11.05.19 14.25	Sample Depth:	20.0 - 20.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 09.57	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 16.56	U	1
Acenaphthylene	208-96-8	**0.0127**	0.00167	mg/kg	11.08.19 16.56		1
Anthracene	120-12-7	**0.00962**	0.00167	mg/kg	11.08.19 16.56		1
Benzo(a)anthracene	56-55-3	**0.0440**	0.00167	mg/kg	11.08.19 16.56		1
Benzo(a)pyrene	50-32-8	**0.0882**	0.00167	mg/kg	11.08.19 16.56		1
Benzo(b)fluoranthene	205-99-2	**0.117**	0.00167	mg/kg	11.08.19 16.56		1
Benzo(g,h,i)perylene	191-24-2	**0.0760**	0.00167	mg/kg	11.08.19 16.56		1
Benzo(k)fluoranthene	207-08-9	**0.0313**	0.00167	mg/kg	11.08.19 16.56		1
Chrysene	218-01-9	**0.0629**	0.00167	mg/kg	11.08.19 16.56		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 16.56	U	1
Fluoranthene	206-44-0	**0.124**	0.00167	mg/kg	11.08.19 16.56		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 16.56	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0579**	0.00167	mg/kg	11.08.19 16.56		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 16.56	U	1
Phenanthrene	85-01-8	**0.0490**	0.00167	mg/kg	11.08.19 16.56		1
Pyrene	129-00-0	**0.155**	0.00167	mg/kg	11.08.19 16.56		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	34	%	31-130	11.08.19 16.56	
2-Fluorobiphenyl	59	%	51-133	11.08.19 16.56	
Terphenyl-D14	81	%	46-137	11.08.19 16.56	

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Sample Id: **D-B34-10.0-10.5** Matrix: Soil Date Received: 11.07.19 10.30

Lab Sample Id: 642303-006 Date Collected: 11.06.19 08.25 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture: 0

Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight

Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0175	mg/kg	11.08.19 15.50	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight

Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.7**	2.00	mg/kg	11.08.19 16.05		10
Barium	7440-39-3	**195**	4.00	mg/kg	11.08.19 16.05		10
Cadmium	7440-43-9	BRL	2.00	mg/kg	11.08.19 16.05	U	10
Chromium	7440-47-3	**6.74**	4.00	mg/kg	11.08.19 16.05		10
Lead	7439-92-1	**7.70**	2.00	mg/kg	11.08.19 16.05		10
Selenium	7782-49-2	BRL	2.00	mg/kg	11.08.19 16.05	U	10
Silver	7440-22-4	BRL	2.00	mg/kg	11.08.19 16.05	U	10

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Sample Id:	**D-B34-10.0-10.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-006	Date Collected:	11.06.19 08.25	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.00	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 17.14	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.08.19 17.14	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.08.19 17.14	U	1
Benzo(a)anthracene	56-55-3	**0.00405**	0.00167	mg/kg	11.08.19 17.14		1
Benzo(a)pyrene	50-32-8	**0.00804**	0.00167	mg/kg	11.08.19 17.14		1
Benzo(b)fluoranthene	205-99-2	**0.00966**	0.00167	mg/kg	11.08.19 17.14		1
Benzo(g,h,i)perylene	191-24-2	**0.00588**	0.00167	mg/kg	11.08.19 17.14		1
Benzo(k)fluoranthene	207-08-9	**0.00302**	0.00167	mg/kg	11.08.19 17.14		1
Chrysene	218-01-9	**0.00499**	0.00167	mg/kg	11.08.19 17.14		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 17.14	U	1
Fluoranthene	206-44-0	**0.0101**	0.00167	mg/kg	11.08.19 17.14		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 17.14	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00452**	0.00167	mg/kg	11.08.19 17.14		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 17.14	U	1
Phenanthrene	85-01-8	**0.00276**	0.00167	mg/kg	11.08.19 17.14		1
Pyrene	129-00-0	**0.0140**	0.00167	mg/kg	11.08.19 17.14		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	61	%	31-130	11.08.19 17.14	
2-Fluorobiphenyl	104	%	51-133	11.08.19 17.14	
Terphenyl-D14	100	%	46-137	11.08.19 17.14	

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Sample Id: **D-B34-15.0-15.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-007 Date Collected: 11.06.19 08.35 Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0315**	0.0179	mg/kg	11.08.19 15.52		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.59**	1.82	mg/kg	11.08.19 16.08		10
Barium	7440-39-3	**84.2**	3.64	mg/kg	11.08.19 16.08		10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.08.19 16.08	U	10
Chromium	7440-47-3	**6.19**	3.64	mg/kg	11.08.19 16.08		10
Lead	7439-92-1	**10.1**	1.82	mg/kg	11.08.19 16.08		10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.08.19 16.08	U	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.08.19 16.08	U	10

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Sample Id:	**D-B34-15.0-15.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-007	Date Collected:	11.06.19 08.35	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.03	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.08.19 17.30	U	1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.08.19 17.30	U	1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.08.19 17.30	U	1
Benzo(a)anthracene	56-55-3	**0.00634**	0.00166	mg/kg	11.08.19 17.30		1
Benzo(a)pyrene	50-32-8	**0.0109**	0.00166	mg/kg	11.08.19 17.30		1
Benzo(b)fluoranthene	205-99-2	**0.0142**	0.00166	mg/kg	11.08.19 17.30		1
Benzo(g,h,i)perylene	191-24-2	**0.00731**	0.00166	mg/kg	11.08.19 17.30		1
Benzo(k)fluoranthene	207-08-9	**0.00443**	0.00166	mg/kg	11.08.19 17.30		1
Chrysene	218-01-9	**0.00809**	0.00166	mg/kg	11.08.19 17.30		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.08.19 17.30	U	1
Fluoranthene	206-44-0	**0.0158**	0.00166	mg/kg	11.08.19 17.30		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.08.19 17.30	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00593**	0.00166	mg/kg	11.08.19 17.30		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.08.19 17.30	U	1
Phenanthrene	85-01-8	**0.00647**	0.00166	mg/kg	11.08.19 17.30		1
Pyrene	129-00-0	**0.0196**	0.00166	mg/kg	11.08.19 17.30		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	64	%	31-130	11.08.19 17.30	
2-Fluorobiphenyl	104	%	51-133	11.08.19 17.30	
Terphenyl-D14	102	%	46-137	11.08.19 17.30	

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Sample Id: **D-B34-20.0-20.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-008 Date Collected: 11.06.19 08.55 Sample Depth: 20.0 - 20.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.08.19 15.54	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.21**	1.67	mg/kg	11.08.19 16.11		10
Barium	7440-39-3	**99.1**	3.33	mg/kg	11.08.19 16.11		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.08.19 16.11	U	10
Chromium	7440-47-3	**11.8**	3.33	mg/kg	11.08.19 16.11		10
Lead	7439-92-1	**10.8**	1.67	mg/kg	11.08.19 16.11		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.08.19 16.11	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.08.19 16.11	U	10

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Sample Id:	**D-B34-20.0-20.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-008	Date Collected:	11.06.19 08.55	Sample Depth:	20.0 - 20.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.06	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 17.46	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.08.19 17.46	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.08.19 17.46	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	49	%	31-130	11.08.19 17.46	
2-Fluorobiphenyl	79	%	51-133	11.08.19 17.46	
Terphenyl-D14	80	%	46-137	11.08.19 17.46	

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Sample Id: **D-B33-10.0-10.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-009 Date Collected: 11.06.19 09.35 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0196	mg/kg	11.08.19 15.56	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.04**	1.67	mg/kg	11.08.19 16.14		10
Barium	7440-39-3	**65.1**	3.33	mg/kg	11.08.19 16.14		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.08.19 16.14	U	10
Chromium	7440-47-3	**9.26**	3.33	mg/kg	11.08.19 16.14		10
Lead	7439-92-1	**11.7**	1.67	mg/kg	11.08.19 16.14		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.08.19 16.14	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.08.19 16.14	U	10

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Sample Id:	**D-B33-10.0-10.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-009	Date Collected:	11.06.19 09.35	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.09	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.08.19 22.16	U	1
Acenaphthylene	208-96-8	**0.00292**	0.00166	mg/kg	11.08.19 22.16		1
Anthracene	120-12-7	**0.00302**	0.00166	mg/kg	11.08.19 22.16		1
Benzo(a)anthracene	56-55-3	**0.00986**	0.00166	mg/kg	11.08.19 22.16		1
Benzo(a)pyrene	50-32-8	**0.0135**	0.00166	mg/kg	11.08.19 22.16		1
Benzo(b)fluoranthene	205-99-2	**0.0286**	0.00166	mg/kg	11.08.19 22.16		1
Benzo(g,h,i)perylene	191-24-2	**0.00871**	0.00166	mg/kg	11.08.19 22.16		1
Benzo(k)fluoranthene	207-08-9	**0.00756**	0.00166	mg/kg	11.08.19 22.16		1
Chrysene	218-01-9	**0.0143**	0.00166	mg/kg	11.08.19 22.16		1
Dibenz(a,h)Anthracene	53-70-3	**0.00253**	0.00166	mg/kg	11.08.19 22.16		1
Fluoranthene	206-44-0	**0.0241**	0.00166	mg/kg	11.08.19 22.16		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.08.19 22.16	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00753**	0.00166	mg/kg	11.08.19 22.16		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.08.19 22.16	U	1
Phenanthrene	85-01-8	**0.0102**	0.00166	mg/kg	11.08.19 22.16		1
Pyrene	129-00-0	**0.0191**	0.00166	mg/kg	11.08.19 22.16		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	54	%	31-130	11.08.19 22.16	
2-Fluorobiphenyl	87	%	51-133	11.08.19 22.16	
Terphenyl-D14	89	%	46-137	11.08.19 22.16	

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Sample Id: **D-B33-15.0-15.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-010 Date Collected: 11.06.19 09.40 Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0167	mg/kg	11.08.19 15.58	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**32.6**	1.89	mg/kg	11.08.19 16.32		10
Barium	7440-39-3	**201**	3.77	mg/kg	11.08.19 16.32		10
Cadmium	7440-43-9	BRL	1.89	mg/kg	11.08.19 16.32	U	10
Chromium	7440-47-3	**16.7**	3.77	mg/kg	11.08.19 16.32		10
Lead	7439-92-1	**9.69**	1.89	mg/kg	11.08.19 16.32		10
Selenium	7782-49-2	BRL	1.89	mg/kg	11.08.19 16.32	U	10
Silver	7440-22-4	BRL	1.89	mg/kg	11.08.19 16.32	U	10

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Sample Id:	**D-B33-15.0-15.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-010	Date Collected:	11.06.19 09.40	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.12	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Benzo(b)fluoranthene	205-99-2	**0.00198**	0.00167	mg/kg	11.08.19 18.02		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Fluoranthene	206-44-0	**0.00217**	0.00167	mg/kg	11.08.19 18.02		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 18.02	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.08.19 18.02	U	1
Pyrene	129-00-0	**0.00226**	0.00167	mg/kg	11.08.19 18.02		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	66	%	31-130	11.08.19 18.02	
2-Fluorobiphenyl	106	%	51-133	11.08.19 18.02	
Terphenyl-D14	101	%	46-137	11.08.19 18.02	

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APS MGP Douglas, AZ

Sample Id: **D-B33-20.0-20.5** Matrix: Soil Date Received: 11.07.19 10.30

Lab Sample Id: 642303-011 Date Collected: 11.06.19 09.45 Sample Depth: 20.0 - 20.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture: 0

Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight

Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0172	mg/kg	11.08.19 16.00	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight

Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**10.0**	1.75	mg/kg	11.08.19 16.35		10
Barium	7440-39-3	**212**	3.51	mg/kg	11.08.19 16.35		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.08.19 16.35	U	10
Chromium	7440-47-3	**9.87**	3.51	mg/kg	11.08.19 16.35		10
Lead	7439-92-1	**9.34**	1.75	mg/kg	11.08.19 16.35		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.08.19 16.35	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.08.19 16.35	U	10

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Sample Id:	**D-B33-20.0-20.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-011	Date Collected:	11.06.19 09.45	Sample Depth:	20.0 - 20.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.15	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 18.21	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.08.19 18.21	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.08.19 18.21	U	1
Benzo(a)anthracene	56-55-3	**0.00178**	0.00167	mg/kg	11.08.19 18.21		1
Benzo(a)pyrene	50-32-8	**0.00274**	0.00167	mg/kg	11.08.19 18.21		1
Benzo(b)fluoranthene	205-99-2	**0.00552**	0.00167	mg/kg	11.08.19 18.21		1
Benzo(g,h,i)perylene	191-24-2	**0.00211**	0.00167	mg/kg	11.08.19 18.21		1
Benzo(k)fluoranthene	207-08-9	**0.00176**	0.00167	mg/kg	11.08.19 18.21		1
Chrysene	218-01-9	**0.00425**	0.00167	mg/kg	11.08.19 18.21		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 18.21	U	1
Fluoranthene	206-44-0	**0.00600**	0.00167	mg/kg	11.08.19 18.21		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 18.21	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00175**	0.00167	mg/kg	11.08.19 18.21		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 18.21	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.08.19 18.21	U	1
Pyrene	129-00-0	**0.00750**	0.00167	mg/kg	11.08.19 18.21		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	70	%	31-130	11.08.19 18.21	
2-Fluorobiphenyl	108	%	51-133	11.08.19 18.21	
Terphenyl-D14	98	%	46-137	11.08.19 18.21	

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Sample Id: **D-B32-10.0-10.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-012 Date Collected: 11.06.19 10.25 Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0336**	0.0169	mg/kg	11.08.19 16.15		1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**8.49**	1.67	mg/kg	11.08.19 16.38		10
Barium	7440-39-3	**156**	3.33	mg/kg	11.08.19 16.38		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.08.19 16.38	U	10
Chromium	7440-47-3	**7.09**	3.33	mg/kg	11.08.19 16.38		10
Lead	7439-92-1	**27.7**	1.67	mg/kg	11.08.19 16.38		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.08.19 16.38	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.08.19 16.38	U	10

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Sample Id:	**D-B32-10.0-10.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-012	Date Collected:	11.06.19 10.25	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.18	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 22.33	U	1
Acenaphthylene	208-96-8	**0.00289**	0.00167	mg/kg	11.08.19 22.33		1
Anthracene	120-12-7	**0.00379**	0.00167	mg/kg	11.08.19 22.33		1
Benzo(a)anthracene	56-55-3	**0.0134**	0.00167	mg/kg	11.08.19 22.33		1
Benzo(a)pyrene	50-32-8	**0.0192**	0.00167	mg/kg	11.08.19 22.33		1
Benzo(b)fluoranthene	205-99-2	**0.0339**	0.00167	mg/kg	11.08.19 22.33		1
Benzo(g,h,i)perylene	191-24-2	**0.0110**	0.00167	mg/kg	11.08.19 22.33		1
Benzo(k)fluoranthene	207-08-9	**0.00799**	0.00167	mg/kg	11.08.19 22.33		1
Chrysene	218-01-9	**0.0176**	0.00167	mg/kg	11.08.19 22.33		1
Dibenz(a,h)Anthracene	53-70-3	**0.00245**	0.00167	mg/kg	11.08.19 22.33		1
Fluoranthene	206-44-0	**0.0288**	0.00167	mg/kg	11.08.19 22.33		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 22.33	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00987**	0.00167	mg/kg	11.08.19 22.33		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 22.33	U	1
Phenanthrene	85-01-8	**0.0107**	0.00167	mg/kg	11.08.19 22.33		1
Pyrene	129-00-0	**0.0272**	0.00167	mg/kg	11.08.19 22.33		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	60	%	31-130	11.08.19 22.33	
2-Fluorobiphenyl	94	%	51-133	11.08.19 22.33	
Terphenyl-D14	96	%	46-137	11.08.19 22.33	

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Sample Id: **D-B32-15.0-15.5** Matrix: Soil Date Received: 11.07.19 10.30

Lab Sample Id: 642303-013 Date Collected: 11.06.19 10.45 Sample Depth: 15.0 - 15.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P

Tech: ADS % Moisture: 0

Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight

Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	11.08.19 16.16	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B

Tech: PJB % Moisture:

Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight

Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**10.3**	1.67	mg/kg	11.08.19 16.41		10
Barium	7440-39-3	**241**	3.33	mg/kg	11.08.19 16.41		10
Cadmium	7440-43-9	BRL	1.67	mg/kg	11.08.19 16.41	U	10
Chromium	7440-47-3	**10.5**	3.33	mg/kg	11.08.19 16.41		10
Lead	7439-92-1	**3.86**	1.67	mg/kg	11.08.19 16.41		10
Selenium	7782-49-2	BRL	1.67	mg/kg	11.08.19 16.41	U	10
Silver	7440-22-4	BRL	1.67	mg/kg	11.08.19 16.41	U	10

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Sample Id:	**D-B32-15.0-15.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-013	Date Collected:	11.06.19 10.45	Sample Depth:	15.0 - 15.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.21	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 20.35	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.08.19 20.35	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.08.19 20.35	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	61	%	31-130	11.08.19 20.35	
2-Fluorobiphenyl	97	%	51-133	11.08.19 20.35	
Terphenyl-D14	92	%	46-137	11.08.19 20.35	

APS, Phoenix, AZ

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Sample Id: **D-B32-20.0-20.5** Matrix: Soil Date Received: 11.07.19 10.30
Lab Sample Id: 642303-014 Date Collected: 11.06.19 10.55 Sample Depth: 20.0 - 20.5

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Moisture: 0
Analyst: ANJ Date Prep: 11.08.19 10.09 Basis: Dry Weight
Seq Number: 3106924 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.08.19 16.18	U	1

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Moisture:
Analyst: DEP Date Prep: 11.08.19 10.30 Basis: Wet Weight
Seq Number: 3106917 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**9.75**	1.72	mg/kg	11.08.19 16.44		10
Barium	7440-39-3	**236**	3.45	mg/kg	11.08.19 16.44		10
Cadmium	7440-43-9	BRL	1.72	mg/kg	11.08.19 16.44	U	10
Chromium	7440-47-3	**14.0**	3.45	mg/kg	11.08.19 16.44		10
Lead	7439-92-1	**5.19**	1.72	mg/kg	11.08.19 16.44		10
Selenium	7782-49-2	BRL	1.72	mg/kg	11.08.19 16.44	U	10
Silver	7440-22-4	BRL	1.72	mg/kg	11.08.19 16.44	U	10

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Sample Id:	**D-B32-20.0-20.5**	Matrix:	Soil	Date Received:	11.07.19 10.30
Lab Sample Id:	642303-014	Date Collected:	11.06.19 10.55	Sample Depth:	20.0 - 20.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	JOZ			% Moisture:	
Analyst:	DNE	Date Prep:	11.08.19 10.24	Basis:	Wet Weight
Seq Number:	3106889			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.08.19 20.52	U	1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.08.19 20.52	U	1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.08.19 20.52	U	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	59	%	31-130	11.08.19 20.52	
2-Fluorobiphenyl	94	%	51-133	11.08.19 20.52	
Terphenyl-D14	95	%	46-137	11.08.19 20.52	

QC Summary 642303

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Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106924 Matrix: Solid Date Prep: 11.08.19
MB Sample Id: 7689880-1-BLK LCS Sample Id: 7689880-1-BKS LCSD Sample Id: 7689880-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00377	0.196	0.230	117	0.231	118	80-120	0	20	mg/kg	11.08.19 15:28	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106924 Matrix: Soil Date Prep: 11.08.19
Parent Sample Id: 642303-001 MS Sample Id: 642303-001 S MSD Sample Id: 642303-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00363	0.189	0.211	112	0.213	115	75-125	1	20	mg/kg	11.08.19 15:33	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3106924 Matrix: Soil Date Prep: 11.08.19
Parent Sample Id: 642303-004 MS Sample Id: 642303-004 S MSD Sample Id: 642303-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00500	0.175	0.184	102	0.186	105	75-125	1	20	mg/kg	11.08.19 16:07	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3106917 Matrix: Solid Date Prep: 11.08.19
MB Sample Id: 7689919-1-BLK LCS Sample Id: 7689919-1-BKS LCSD Sample Id: 7689919-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	10.4	104	10.2	102	80-120	2	20	mg/kg	11.08.19 15:21	
Barium	<0.400	10.0	10.1	101	10.2	102	80-120	1	20	mg/kg	11.08.19 15:21	
Cadmium	<0.200	10.0	10.4	104	10.4	104	80-120	0	20	mg/kg	11.08.19 15:21	
Chromium	<0.400	10.0	10.3	103	10.2	102	80-120	1	20	mg/kg	11.08.19 15:21	
Lead	<0.200	10.0	10.2	102	10.2	102	80-120	0	20	mg/kg	11.08.19 15:21	
Selenium	<0.200	10.0	10.6	106	10.4	104	80-120	2	20	mg/kg	11.08.19 15:21	
Silver	<0.200	5.00	5.10	102	5.14	103	80-120	1	20	mg/kg	11.08.19 15:21	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642303

APS

APS MGP Douglas, AZ

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B

Seq Number: 3106917 Matrix: Soil Date Prep: 11.08.19

Parent Sample Id: 642303-004 MS Sample Id: 642303-004 S MSD Sample Id: 642303-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	13.8	9.26	22.5	94	22.1	91	75-125	2	30	mg/kg	11.08.19 15:33	
Barium	170	9.26	172	22	168	0	75-125	2	30	mg/kg	11.08.19 15:33	X
Cadmium	<1.85	9.26	9.63	104	9.58	105	75-125	1	30	mg/kg	11.08.19 15:33	
Chromium	12.8	9.26	21.7	96	21.7	98	75-125	0	30	mg/kg	11.08.19 15:33	
Lead	13.8	9.26	22.7	96	22.1	91	75-125	3	30	mg/kg	11.08.19 15:33	
Selenium	<1.85	9.26	9.78	106	9.73	107	75-125	1	30	mg/kg	11.08.19 15:33	
Silver	<1.85	4.63	3.22	70	3.18	70	75-125	1	30	mg/kg	11.08.19 15:33	X

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106889 Matrix: Solid Date Prep: 11.08.19

MB Sample Id: 7689878-1-BLK LCS Sample Id: 7689878-1-BKS LCSD Sample Id: 7689878-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0306	92	0.0289	87	42-116	6	25	mg/kg	11.08.19 12:30	
Acenaphthylene	<0.00167	0.0333	0.0291	87	0.0273	82	42-121	6	25	mg/kg	11.08.19 12:30	
Anthracene	<0.00167	0.0333	0.0312	94	0.0294	88	44-120	6	25	mg/kg	11.08.19 12:30	
Benzo(a)anthracene	<0.00167	0.0333	0.0319	96	0.0312	94	52-121	2	25	mg/kg	11.08.19 12:30	
Benzo(a)pyrene	<0.00167	0.0333	0.0331	99	0.0320	96	50-128	3	25	mg/kg	11.08.19 12:30	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0347	104	0.0333	100	49-137	4	25	mg/kg	11.08.19 12:30	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0343	103	0.0334	100	47-132	3	25	mg/kg	11.08.19 12:30	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0340	102	0.0331	99	48-133	3	25	mg/kg	11.08.19 12:30	
Chrysene	<0.00167	0.0333	0.0313	94	0.0301	90	54-113	4	25	mg/kg	11.08.19 12:30	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0353	106	0.0344	103	48-133	3	25	mg/kg	11.08.19 12:30	
Fluoranthene	<0.00167	0.0333	0.0331	99	0.0318	95	54-128	4	25	mg/kg	11.08.19 12:30	
Fluorene	<0.00167	0.0333	0.0307	92	0.0289	87	44-118	6	25	mg/kg	11.08.19 12:30	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0350	105	0.0341	102	49-129	3	25	mg/kg	11.08.19 12:30	
Naphthalene	<0.0167	0.0333	0.0301	90	0.0279	84	40-135	8	25	mg/kg	11.08.19 12:30	
Phenanthrene	<0.00167	0.0333	0.0320	96	0.0301	90	44-119	6	25	mg/kg	11.08.19 12:30	
Pyrene	<0.00167	0.0333	0.0321	96	0.0305	92	50-126	5	25	mg/kg	11.08.19 12:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	81		83		78		31-130	%	11.08.19 12:30
2-Fluorobiphenyl	96		98		93		51-133	%	11.08.19 12:30
Terphenyl-D14	97		100		97		46-137	%	11.08.19 12:30

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642303

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3106889 Matrix: Soil Date Prep: 11.08.19

Parent Sample Id: 642303-004 MS Sample Id: 642303-004 S MSD Sample Id: 642303-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0263	79	0.0304	91	42-116	14	25	mg/kg	11.08.19 13:54	
Acenaphthylene	<0.00167	0.0333	0.0243	73	0.0280	84	42-121	14	25	mg/kg	11.08.19 13:54	
Anthracene	<0.00167	0.0333	0.0271	81	0.0314	94	44-120	15	25	mg/kg	11.08.19 13:54	
Benzo(a)anthracene	0.00266	0.0333	0.0288	78	0.0334	92	52-121	15	25	mg/kg	11.08.19 13:54	
Benzo(a)pyrene	0.00431	0.0333	0.0309	80	0.0363	96	50-128	16	25	mg/kg	11.08.19 13:54	
Benzo(b)fluoranthene	0.00604	0.0333	0.0319	78	0.0409	105	49-137	25	25	mg/kg	11.08.19 13:54	
Benzo(g,h,i)perylene	0.00598	0.0333	0.0325	80	0.0397	101	47-132	20	25	mg/kg	11.08.19 13:54	
Benzo(k)fluoranthene	0.00187	0.0333	0.0303	85	0.0330	93	48-133	9	25	mg/kg	11.08.19 13:54	
Chrysene	0.00352	0.0333	0.0288	76	0.0338	91	54-113	16	25	mg/kg	11.08.19 13:54	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0295	89	0.0348	105	48-133	16	25	mg/kg	11.08.19 13:54	
Fluoranthene	0.00772	0.0333	0.0326	75	0.0383	92	54-128	16	25	mg/kg	11.08.19 13:54	
Fluorene	<0.00167	0.0333	0.0264	79	0.0304	91	44-118	14	25	mg/kg	11.08.19 13:54	
Indeno(1,2,3-c,d)Pyrene	0.00395	0.0333	0.0317	83	0.0380	102	49-129	18	25	mg/kg	11.08.19 13:54	
Naphthalene	<0.0167	0.0333	0.0260	78	0.0297	89	40-135	13	25	mg/kg	11.08.19 13:54	
Phenanthrene	0.00383	0.0333	0.0291	76	0.0337	90	44-119	15	25	mg/kg	11.08.19 13:54	
Pyrene	0.00917	0.0333	0.0328	71	0.0384	88	50-126	16	25	mg/kg	11.08.19 13:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	70		80		31-130	%	11.08.19 13:54
2-Fluorobiphenyl	84		96		51-133	%	11.08.19 13:54
Terphenyl-D14	85		99		46-137	%	11.08.19 13:54

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

Work Order No: 1042303

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 2

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48 hr	
Sampler's Name:		Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):		Thermometer ID		
Received Intact:	(Yes) No			
Cooler Custody Seals:	(Yes) No N/A	IR ID:HOU-068	C/F:+0.2	
Sample Custody Seals:	Yes No (N/A)	Temp: 0.6	Corrected: 0.8	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide						Sample Comments
D-B18-10.0-10.5	S	11-5-19	1245	10.0-10.5	1	X	X												
D-B18-15.0-15.5	S		1255	15.0-15.5	2	X	X												
D-B35-10.0-10.5	S		1400	10.0-10.5	2	X	X												
D-B35-15.0-15.5	S		1415	15.0-15.5	2	X	X												MS/MSD
D-B35-20.0-20.5	S		1425	20.0-20.5	2	X	X												
D-B34-10.0-10.5	S	10-6-19	0825	10.0-10.5	2	X	X												
D-B34-15.0-15.5	S		0835	15.0-15.5	2	X	X												
D-B34-20.0-20.5	S		0855	20.0-20.5	2	X	X												
D-B33-10.0-10.5	S		0935	10.0-10.5	2	X	X												
D-B33-15.0-15.5	S		0940	15.0-15.5	2	X	X												

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	FedEx	11-6-19 1300	2 FedEx		11-7-19 1030
3			4		
5			6		

Chain of Custody

Work Order No: 642303

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 2 of 2

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST☐ PRP☐ Brownfields☐ RRC☐ Superfur☐
State of Project: Arizona
Reporting:Level II [X] Level III☐ PST/UST☐ TRRP☐ Level IV☐
Deliverables: EDD☐ ADaPT☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush: 48 hr.	
Sampler's Name:		Due Date:	

SAMPLE RECEIPT

Temp Blank:	Yes No	Wet Ice:	Yes No
Temperature (°C):		Thermometer ID	
Received Intact:	Yes No	IR ID:HOU-068	C/F:+0.2
Cooler Custody Seals:	Yes No N/A	Temp: 1.6	Corrected: 0.8
Sample Custody Seals:	Yes No N/A	Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide
D-B33-20.0-20.5	S	11-6-19	0945	20.0-20.5	2	X	X						
D-B32-10.0-10.5	S		1025	10.0-10.5	2	X	X						
D-B32-15.0-15.5	S		1045	15.0-15.5	2	X	X						
D-B32-20.0-20.5	S		1055	20.0-20.5	2	X	X						
	S												
	S												
	S												
	S												

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

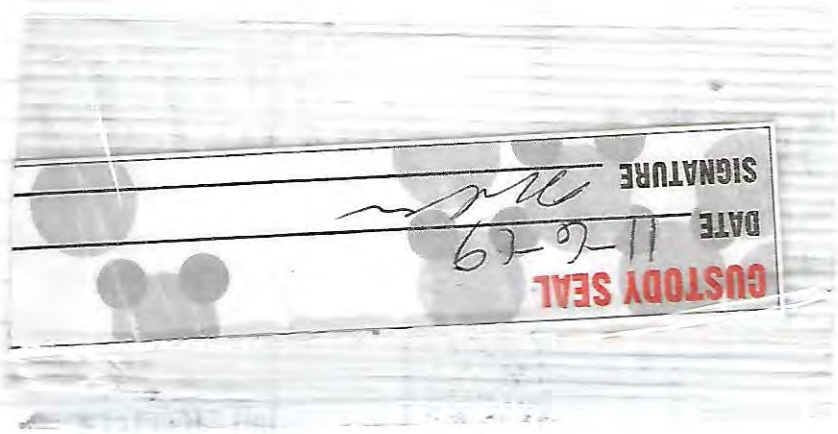
Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx	11-6-19 1300	2 FedEx		11/7/19 1030
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

FedEx.
TRK#
0200 8125 9253 6266
THU - 07 NOV 10:30A
PRIORITY OVERNIGHT
HAC
XH SGRA
77477
TX-US
IAH
FID 3648448 06NOV19 AVWA 56AC1/F330/05A2


SIGNATURE
DATE 11-6-19
CUSTODY SEAL

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 11/07/2019 10:30:00 AM

Work Order #: 642303

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: MDS

PH Device/Lot#:

Checklist completed by: Monica Shakhshir Date: 11/07/2019

Checklist reviewed by: Ruriko Konuma Date: 11/08/2019

Analytical Report 642585

for

APS

Project Manager: Judy Heywood

APS MGP Douglas, AZ

03118600.A.CS.EV.DG.05-1B

11.13.2019

Collected By: Client

4147 Greenbriar Dr.
Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

11.13.2019

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: XENCO Report No(s): **642585**
APS MGP Douglas, AZ
Project Address:

Judy Heywood:

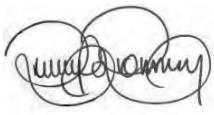
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 642585. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 642585 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,



Ruriko Konuma
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

CASE NARRATIVE

Client Name: APS

Project Name: APS MGP Douglas, AZ

Project ID: *03118600.A.CS.EV.DG.05*
Work Order Number(s): *642585*

Report Date: *11.13.2019*
Date Received: *11.08.2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107032 Metals, RCRA List, by SW 6020

Lab Sample ID 642585-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Silver recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Arsenic recovered above QC limits in the Matrix Spike. Barium, Chromium, Lead recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642585-001, -002, -004, -005, -006, -007.
The Laboratory Control Sample for Silver, Arsenic, Chromium, Barium, Lead is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3107033 Volatiles by SW 8260C

Iodomethane (Methyl Iodide), Propene, n-Hexane recovered below QC limits in the Blank Spike Duplicate indicating bias low results. Samples in the analytical batch are: 642585-004, -008.

Lab Sample ID 642585-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). 1,1,1-Trichloroethane recovered below QC limits in the Matrix Spike. 2-Butanone, Bromomethane, Chloroethane, Cyclohexane, Iodomethane (Methyl Iodide), Propene, Trichlorofluoromethane, n-Hexane recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642585-004, -008.
The Laboratory Control Sample for Bromomethane, Iodomethane (Methyl Iodide), Propene, n-Hexane , Trichlorofluoromethane, 1,1,1-Trichloroethane, 2-Butanone, Cyclohexane, Chloroethane is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3107121 Metals, RCRA List, by SW 6020

Lab Sample ID 642585-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Barium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642585-003.
The Laboratory Control Sample for Barium is within laboratory Control Limits, therefore the data was accepted.

CASE NARRATIVE

Client Name: APS

Project Name: APS MGP Douglas, AZ

Project ID: *03118600.A.CS.EV.DG.05*
Work Order Number(s): *642585*

Report Date: *11.13.2019*
Date Received: *11.08.2019*

Batch: LBA-3107146 PAHs by 8270D SIM

Benzo(b)fluoranthene , Dibenz(a,h)Anthracene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 642585-001, -002, -003, -004, -005, -006, -007

Surrogate Nitrobenzene-d5 recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7690085-1-BSD,642585-003 S,642585-003 SD,642585-007,642585-006,642585-005.

Lab Sample ID 642585-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Benzo(b)fluoranthene , Pyrene recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642585-001, -002, -003, -004, -005, -006, -007.
The Laboratory Control Sample for Pyrene, Benzo(b)fluoranthene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3107194 Total Cyanide by SW 9012

Lab Sample ID 642585-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Cyanide, Total recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642585-004.
The Laboratory Control Sample for Cyanide, Total is within laboratory Control Limits, therefore the data was accepted.

Flagging Criteria

Arizona Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

M1 Matrix spike recovery was high; the associated blank spike recovery was acceptable.

M2 Matrix spike recovery was low; the associated blank spike recovery was acceptable.

R2 RPD/RSD exceeded the laboratory acceptance limit. See case narrative.

R5 MS/MSD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.

S10 Surrogate recovery was above laboratory and method acceptance limits. See case narrative.

Sample Cross Reference 642585

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-B31-10.0-10.5	S	11.06.2019 13:00	10.0 - 10.5	642585-001
D-B31-15.0-15.5	S	11.06.2019 13:10	15.0 - 15.5	642585-002
D-B31-20.0-20.5	S	11.06.2019 13:20	20.0 - 20.5	642585-003
D-B29-5.0-5.5	S	11.07.2019 08:00	5.0 - 5.5	642585-004
D-B29-10.0-10.5	S	11.07.2019 08:30	10.0 - 10.5	642585-005
D-B29-15.0-15.5	S	11.07.2019 08:55	15.0 - 15.5	642585-006
D-B29-20.0-20.5	S	11.07.2019 09:10	20.0 - 20.5	642585-007
D-TB01-110719	S	11.07.2019 08:00		642585-008

Certificate of Analytical Results 642585

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B31-10.0-10.5**
Matrix: Soil
Date Received:11.08.2019 11:00
Lab Sample Id: 642585-001
Date Collected: 11.06.2019 13:00
Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.12.2019 11:10
Basis: Wet Weight
Seq Number: 3107216
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0185	mg/kg	11.12.2019 16:58		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.10.2019 14:00
Basis: Wet Weight
Seq Number: 3107032
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.8**	1.82	mg/kg	11.11.2019 12:16	D2	10
Barium	7440-39-3	**211**	3.64	mg/kg	11.11.2019 12:16	D2	10
Cadmium	7440-43-9	BRL	1.82	mg/kg	11.11.2019 12:16	D1	10
Chromium	7440-47-3	**8.25**	3.64	mg/kg	11.11.2019 12:16	D2	10
Lead	7439-92-1	**6.48**	1.82	mg/kg	11.11.2019 12:16	D2	10
Selenium	7782-49-2	BRL	1.82	mg/kg	11.11.2019 12:16	D1	10
Silver	7440-22-4	BRL	1.82	mg/kg	11.11.2019 12:16	D1	10

Certificate of Analytical Results 642585

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B31-10.0-10.5**	Matrix:	Soil	Date Received:	11.08.2019 11:00
Lab Sample Id:	642585-001	Date Collected:	11.06.2019 13:00	Sample Depth:	10.0 - 10.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	AHI			% Moisture:	
Analyst:	DNE	Date Prep:	11.11.2019 14:48	Basis:	Wet Weight
Seq Number:	3107146			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Benzo(b)fluoranthene	205-99-2	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Fluoranthene	206-44-0	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.12.2019 03:14		1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.12.2019 03:14		1
Pyrene	129-00-0	BRL	0.00167	mg/kg	11.12.2019 03:14		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	109	%	31-130	11.12.2019 03:14	
2-Fluorobiphenyl	90	%	51-133	11.12.2019 03:14	
Terphenyl-D14	111	%	46-137	11.12.2019 03:14	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B31-15.0-15.5**	Matrix:	Soil	Date Received:	11.08.2019 11:00
Lab Sample Id:	642585-002	Date Collected:	11.06.2019 13:10	Sample Depth:	15.0 - 15.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	11.12.2019 11:10	Basis:	Wet Weight
Seq Number:	3107216			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0169	mg/kg	11.12.2019 17:00		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.10.2019 14:00	Basis:	Wet Weight
Seq Number:	3107032			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**18.4**	1.85	mg/kg	11.11.2019 12:19	D2	10
Barium	7440-39-3	**114**	3.70	mg/kg	11.11.2019 12:19	D2	10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.11.2019 12:19	D1	10
Chromium	7440-47-3	**13.4**	3.70	mg/kg	11.11.2019 12:19	D2	10
Lead	7439-92-1	**6.87**	1.85	mg/kg	11.11.2019 12:19	D2	10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.11.2019 12:19	D1	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.11.2019 12:19	D1	10

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B31-15.0-15.5**
Lab Sample Id: 642585-002

Matrix: Soil
Date Collected: 11.06.2019 13:10

Date Received:11.08.2019 11:00
Sample Depth: 15.0 - 15.5

Analytical Method: PAHs by 8270D SIM
Tech: AHI
Analyst: DNE
Seq Number: 3107146

Date Prep: 11.11.2019 14:51

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Acenaphthylene	208-96-8	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Benzo(a)anthracene	56-55-3	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Benzo(a)pyrene	50-32-8	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Benzo(b)fluoranthene	205-99-2	**0.00241**	0.00167	mg/kg	11.12.2019 03:31		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Chrysene	218-01-9	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Fluoranthene	206-44-0	**0.00282**	0.00167	mg/kg	11.12.2019 03:31		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.12.2019 03:31		1
Phenanthrene	85-01-8	BRL	0.00167	mg/kg	11.12.2019 03:31		1
Pyrene	129-00-0	**0.00314**	0.00167	mg/kg	11.12.2019 03:31		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	127	%	31-130	11.12.2019 03:31	
2-Fluorobiphenyl	98	%	51-133	11.12.2019 03:31	
Terphenyl-D14	114	%	46-137	11.12.2019 03:31	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B31-20.0-20.5**
Matrix: Soil
Date Received:11.08.2019 11:00
Lab Sample Id: 642585-003
Date Collected: 11.06.2019 13:20
Sample Depth: 20.0 - 20.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.12.2019 11:10
Basis: Wet Weight
Seq Number: 3107216
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0182	mg/kg	11.12.2019 16:45		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.11.2019 12:45
Basis: Wet Weight
Seq Number: 3107121
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**12.6**	1.75	mg/kg	11.11.2019 23:18		10
Barium	7440-39-3	**767**	3.51	mg/kg	11.11.2019 23:18		10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.11.2019 23:18	U	10
Chromium	7440-47-3	**10.6**	3.51	mg/kg	11.11.2019 23:18		10
Lead	7439-92-1	**7.26**	1.75	mg/kg	11.11.2019 23:18		10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.11.2019 23:18	U	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.11.2019 23:18	U	10

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B31-20.0-20.5**
Lab Sample Id: 642585-003

Matrix: Soil
Date Collected: 11.06.2019 13:20

Date Received:11.08.2019 11:00
Sample Depth: 20.0 - 20.5

Analytical Method: PAHs by 8270D SIM
Tech: AHI
Analyst: DNE
Seq Number: 3107146

Date Prep: 11.11.2019 14:39

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Benzo(a)anthracene	56-55-3	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Benzo(a)pyrene	50-32-8	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Benzo(b)fluoranthene	205-99-2	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Benzo(g,h,i)perylene	191-24-2	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Benzo(k)fluoranthene	207-08-9	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Chrysene	218-01-9	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Fluoranthene	206-44-0	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.12.2019 02:24		1
Phenanthrene	85-01-8	BRL	0.00166	mg/kg	11.12.2019 02:24		1
Pyrene	129-00-0	BRL	0.00166	mg/kg	11.12.2019 02:24		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	129	%	31-130	11.12.2019 02:24	
2-Fluorobiphenyl	104	%	51-133	11.12.2019 02:24	
Terphenyl-D14	115	%	46-137	11.12.2019 02:24	

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APS, Phoenix, AZ

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Sample Id: **D-B29-5.0-5.5**
Lab Sample Id: 642585-004
Matrix: Soil
Date Collected: 11.07.2019 08:00
Date Received: 11.08.2019 11:00
Sample Depth: 5.0 - 5.5

Analytical Method: Total Cyanide by SW 9012
Tech: KCS
Analyst: KCS
Seq Number: 3107194
Date Prep: 11.12.2019 09:24
Prep Method: E335.4P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	BRL	0.0545	mg/kg	11.12.2019 15:47	D1M2	1

Analytical Method: Mercury by SW 7471B
Tech: ADS
Analyst: ANJ
Seq Number: 3107216
Date Prep: 11.12.2019 11:10
Prep Method: SW7471P
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.0494**	0.0185	mg/kg	11.12.2019 17:19		1

Analytical Method: Metals, RCRA List, by SW 6020
Tech: PJB
Analyst: DEP
Seq Number: 3107032
Date Prep: 11.10.2019 14:00
Prep Method: SW3050B
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.9**	1.85	mg/kg	11.11.2019 12:01	D2M1	10
Barium	7440-39-3	**178**	3.70	mg/kg	11.11.2019 12:01	D2M1	10
Cadmium	7440-43-9	BRL	1.85	mg/kg	11.11.2019 12:01	D1	10
Chromium	7440-47-3	**18.1**	3.70	mg/kg	11.11.2019 12:01	D2M1	10
Lead	7439-92-1	**32.8**	1.85	mg/kg	11.11.2019 12:01	D2M1	10
Selenium	7782-49-2	BRL	1.85	mg/kg	11.11.2019 12:01	D1	10
Silver	7440-22-4	BRL	1.85	mg/kg	11.11.2019 12:01	D1M2	10

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APS, Phoenix, AZ

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Sample Id: **D-B29-5.0-5.5** Matrix: Soil Date Received:11.08.2019 11:00

Lab Sample Id: 642585-004 Date Collected: 11.07.2019 08:00 Sample Depth: 5.0 - 5.5

Analytical Method: Flash Point (CC) SW-846 1010

Tech: JCL % Moisture:

Analyst: JCL Basis: Wet Weight

Seq Number: 3107086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>180		Deg F	11.11.2019 10:39		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: YAV % Moisture:

Analyst: YAV Basis: Wet Weight

Seq Number: 3107180

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass			11.12.2019 14:16		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Moisture:

Analyst: KBU Basis: Wet Weight

Seq Number: 3107068

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.42**		SU	11.11.2019 15:05		1
Temperature	TEMP	**23.0**		Deg C	11.11.2019 15:05	+	1

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Sample Id:	**D-B29-5.0-5.5**	Matrix:	Soil	Date Received:	11.08.2019 11:00
Lab Sample Id:	642585-004	Date Collected:	11.07.2019 08:00	Sample Depth:	5.0 - 5.5
Analytical Method:	PCBs by SW-846 8082A			Prep Method:	SW3550
Tech:	AHI			% Moisture:	
Analyst:	SHM	Date Prep:	11.11.2019 14:09	Basis:	Wet Weight
Seq Number:	3107178				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	BRL	0.0166	mg/kg	11.11.2019 23:52		1
PCB-1221	11104-28-2	BRL	0.0166	mg/kg	11.11.2019 23:52		1
PCB-1232	11141-16-5	BRL	0.0166	mg/kg	11.11.2019 23:52		1
PCB-1242	53469-21-9	BRL	0.0166	mg/kg	11.11.2019 23:52		1
PCB-1248	12672-29-6	BRL	0.0166	mg/kg	11.11.2019 23:52		1
PCB-1254	11097-69-1	**0.0249**	0.0166	mg/kg	11.11.2019 23:52		1
PCB-1260	11096-82-5	BRL	0.0166	mg/kg	11.11.2019 23:52		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	112	%	39-125	11.11.2019 23:52	
Tetrachloro-m-xylene	65	%	37-124	11.11.2019 23:52	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B29-5.0-5.5**	Matrix:	Soil	Date Received:	11.08.2019 11:00
Lab Sample Id:	642585-004	Date Collected:	11.07.2019 08:00	Sample Depth:	5.0 - 5.5
Analytical Method:	PAHs by 8270D SIM			Prep Method:	SW3550
Tech:	AHI			% Moisture:	
Analyst:	DNE	Date Prep:	11.11.2019 14:54	Basis:	Wet Weight
Seq Number:	3107146			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.12.2019 12:20		1
Acenaphthylene	208-96-8	**0.00226**	0.00167	mg/kg	11.12.2019 12:20		1
Anthracene	120-12-7	BRL	0.00167	mg/kg	11.12.2019 12:20		1
Benzo(a)anthracene	56-55-3	**0.00661**	0.00167	mg/kg	11.12.2019 12:20		1
Benzo(a)pyrene	50-32-8	**0.00983**	0.00167	mg/kg	11.12.2019 12:20		1
Benzo(b)fluoranthene	205-99-2	**0.0122**	0.00167	mg/kg	11.12.2019 12:20	M1R2	1
Benzo(g,h,i)perylene	191-24-2	**0.0102**	0.00167	mg/kg	11.12.2019 12:20		1
Benzo(k)fluoranthene	207-08-9	**0.00358**	0.00167	mg/kg	11.12.2019 12:20		1
Chrysene	218-01-9	**0.00777**	0.00167	mg/kg	11.12.2019 12:20		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.12.2019 12:20	R5	1
Fluoranthene	206-44-0	**0.0157**	0.00167	mg/kg	11.12.2019 12:20		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.12.2019 12:20		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00727**	0.00167	mg/kg	11.12.2019 12:20		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.12.2019 12:20		1
Phenanthrene	85-01-8	**0.0120**	0.00167	mg/kg	11.12.2019 12:20		1
Pyrene	129-00-0	**0.0211**	0.00167	mg/kg	11.12.2019 12:20	M1	1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	126	%	31-130	11.12.2019 12:20	
2-Fluorobiphenyl	104	%	51-133	11.12.2019 12:20	
Terphenyl-D14	115	%	46-137	11.12.2019 12:20	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B29-5.0-5.5**	Matrix:	Soil	Date Received:	11.08.2019 11:00
Lab Sample Id:	642585-004	Date Collected:	11.07.2019 08:00	Sample Depth:	5.0 - 5.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.08.2019 16:30	Basis:	Wet Weight
Seq Number:	3107033			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,1-Dichloroethane	75-34-3	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,1-Dichloroethene	75-35-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,1-Dichloropropene	563-58-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2-Dibromoethane	106-93-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2-Dichloroethane	107-06-2	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,2-Dichloropropane	78-87-5	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,3-Dichloropropane	142-28-9	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
2,2-Dichloropropane	594-20-7	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
2-Butanone	78-93-3	BRL	0.978	mg/kg	11.09.2019 01:57	U	50
2-Chlorotoluene	95-49-8	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
2-Hexanone	591-78-6	BRL	2.45	mg/kg	11.09.2019 01:57	U	50
4-Chlorotoluene	106-43-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.45	mg/kg	11.09.2019 01:57	U	50
Acetone	67-64-1	BRL	4.89	mg/kg	11.11.2019 18:04	UD	50
Benzene	71-43-2	BRL	0.0489	mg/kg	11.09.2019 01:57	U	50
Bromobenzene	108-86-1	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Bromochloromethane	74-97-5	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Bromodichloromethane	75-27-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Bromoform	75-25-2	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Bromomethane	74-83-9	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Carbon Disulfide	75-15-0	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Carbon Tetrachloride	56-23-5	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Chlorobenzene	108-90-7	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Chloroethane	75-00-3	BRL	0.489	mg/kg	11.09.2019 01:57	U	50
Chloroform	67-66-3	BRL	0.245	mg/kg	11.09.2019 01:57	U	50

Certificate of Analytical Results 642585

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B29-5.0-5.5**	Matrix:	Soil	Date Received:	11.08.2019 11:00
Lab Sample Id:	642585-004	Date Collected:	11.07.2019 08:00	Sample Depth:	5.0 - 5.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.08.2019 16:30	Basis:	Wet Weight
Seq Number:	3107033			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Dibromochloromethane	124-48-1	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Dibromomethane	74-95-3	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Ethylbenzene	100-41-4	BRL	0.0489	mg/kg	11.09.2019 01:57	U	50
Hexachlorobutadiene	87-68-3	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	0.978	mg/kg	11.11.2019 18:04	UD	50
Isopropylbenzene	98-82-8	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
m,p-Xylenes	179601-23-1	BRL	0.0978	mg/kg	11.09.2019 01:57	U	50
Methylene Chloride	75-09-2	BRL	0.978	mg/kg	11.09.2019 01:57	U	50
MTBE	1634-04-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Naphthalene	91-20-3	BRL	0.489	mg/kg	11.09.2019 01:57	U	50
n-Butylbenzene	104-51-8	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
n-Propylbenzene	103-65-1	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
o-Xylene	95-47-6	BRL	0.0489	mg/kg	11.09.2019 01:57	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Sec-Butylbenzene	135-98-8	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Styrene	100-42-5	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
tert-Butylbenzene	98-06-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Tetrachloroethylene	127-18-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Toluene	108-88-3	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Total Xylenes	1330-20-7	BRL	0.0489	mg/kg	11.09.2019 01:57	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Trichloroethene	79-01-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Trichlorofluoromethane	75-69-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Vinyl Acetate	108-05-4	BRL	0.489	mg/kg	11.09.2019 01:57	U	50
Vinyl Chloride	75-01-4	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
1,3-Butadiene	106-99-0	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Cyclohexane	110-82-7	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Dicyclopentadiene	77-73-6	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Methylcyclohexane	108-87-2	BRL	0.489	mg/kg	11.09.2019 01:57	U	50
n-Hexane	110-54-3	BRL	0.489	mg/kg	11.11.2019 18:04	UD	50
4-Ethyltoluene	622-96-8	BRL	0.245	mg/kg	11.09.2019 01:57	U	50
Propene	115-07-1	BRL	0.245	mg/kg	11.11.2019 18:04	UD	50

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B29-5.0-5.5**	Matrix:	Soil	Date Received:	11.08.2019 11:00
Lab Sample Id:	642585-004	Date Collected:	11.07.2019 08:00	Sample Depth:	5.0 - 5.5
Analytical Method:	Volatiles by SW 8260C			Prep Method:	SW5035A
Tech:	SAD			% Moisture:	
Analyst:	SAD	Date Prep:	11.08.2019 16:30	Basis:	Wet Weight
Seq Number:	3107033			SUB:	T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	96	%	53-142	11.09.2019 01:57	
1,2-Dichloroethane-D4	101	%	56-150	11.09.2019 01:57	
Toluene-D8	105	%	70-130	11.09.2019 01:57	
4-Bromofluorobenzene	95	%	68-152	11.09.2019 01:57	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B29-10.0-10.5**
Matrix: Soil
Date Received:11.08.2019 11:00
Lab Sample Id: 642585-005
Date Collected: 11.07.2019 08:30
Sample Depth: 10.0 - 10.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.12.2019 11:10
Basis: Wet Weight
Seq Number: 3107216
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0192	mg/kg	11.12.2019 17:02		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.10.2019 14:00
Basis: Wet Weight
Seq Number: 3107032
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**15.1**	1.92	mg/kg	11.11.2019 12:22	D2	10
Barium	7440-39-3	**607**	3.85	mg/kg	11.11.2019 12:22	D2	10
Cadmium	7440-43-9	BRL	1.92	mg/kg	11.11.2019 12:22	D1	10
Chromium	7440-47-3	**12.6**	3.85	mg/kg	11.11.2019 12:22	D2	10
Lead	7439-92-1	**12.6**	1.92	mg/kg	11.11.2019 12:22	D2	10
Selenium	7782-49-2	BRL	1.92	mg/kg	11.11.2019 12:22	D1	10
Silver	7440-22-4	BRL	1.92	mg/kg	11.11.2019 12:22	D1	10

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Sample Id: **D-B29-10.0-10.5**
Lab Sample Id: 642585-005

Matrix: Soil
Date Collected: 11.07.2019 08:30

Date Received:11.08.2019 11:00
Sample Depth: 10.0 - 10.5

Analytical Method: PAHs by 8270D SIM
Tech: AHI
Analyst: DNE
Seq Number: 3107146

Date Prep: 11.11.2019 15:03

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00166	mg/kg	11.12.2019 03:48		1
Acenaphthylene	208-96-8	BRL	0.00166	mg/kg	11.12.2019 03:48		1
Anthracene	120-12-7	BRL	0.00166	mg/kg	11.12.2019 03:48		1
Benzo(a)anthracene	56-55-3	**0.00596**	0.00166	mg/kg	11.12.2019 03:48		1
Benzo(a)pyrene	50-32-8	**0.00735**	0.00166	mg/kg	11.12.2019 03:48		1
Benzo(b)fluoranthene	205-99-2	**0.0102**	0.00166	mg/kg	11.12.2019 03:48		1
Benzo(g,h,i)perylene	191-24-2	**0.00666**	0.00166	mg/kg	11.12.2019 03:48		1
Benzo(k)fluoranthene	207-08-9	**0.00267**	0.00166	mg/kg	11.12.2019 03:48		1
Chrysene	218-01-9	**0.00635**	0.00166	mg/kg	11.12.2019 03:48		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00166	mg/kg	11.12.2019 03:48		1
Fluoranthene	206-44-0	**0.00866**	0.00166	mg/kg	11.12.2019 03:48		1
Fluorene	86-73-7	BRL	0.00166	mg/kg	11.12.2019 03:48		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.00507**	0.00166	mg/kg	11.12.2019 03:48		1
Naphthalene	91-20-3	BRL	0.0166	mg/kg	11.12.2019 03:48		1
Phenanthrene	85-01-8	**0.00384**	0.00166	mg/kg	11.12.2019 03:48		1
Pyrene	129-00-0	**0.0107**	0.00166	mg/kg	11.12.2019 03:48		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	139	%	31-130	11.12.2019 03:48	S10
2-Fluorobiphenyl	112	%	51-133	11.12.2019 03:48	
Terphenyl-D14	121	%	46-137	11.12.2019 03:48	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id:	**D-B29-15.0-15.5**	Matrix:	Soil	Date Received:	11.08.2019 11:00
Lab Sample Id:	642585-006	Date Collected:	11.07.2019 08:55	Sample Depth:	15.0 - 15.5

Analytical Method:	Mercury by SW 7471B			Prep Method:	SW7471P
Tech:	ADS			% Moisture:	
Analyst:	ANJ	Date Prep:	11.12.2019 11:10	Basis:	Wet Weight
Seq Number:	3107216			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0200	mg/kg	11.12.2019 17:04		1

Analytical Method:	Metals, RCRA List, by SW 6020			Prep Method:	SW3050B
Tech:	PJB			% Moisture:	
Analyst:	DEP	Date Prep:	11.10.2019 14:00	Basis:	Wet Weight
Seq Number:	3107032			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**20.4**	1.96	mg/kg	11.11.2019 12:25	D2	10
Barium	7440-39-3	**413**	3.92	mg/kg	11.11.2019 12:25	D2	10
Cadmium	7440-43-9	BRL	1.96	mg/kg	11.11.2019 12:25	D1	10
Chromium	7440-47-3	**15.0**	3.92	mg/kg	11.11.2019 12:25	D2	10
Lead	7439-92-1	**20.3**	1.96	mg/kg	11.11.2019 12:25	D2	10
Selenium	7782-49-2	BRL	1.96	mg/kg	11.11.2019 12:25	D1	10
Silver	7440-22-4	BRL	1.96	mg/kg	11.11.2019 12:25	D1	10

Certificate of Analytical Results 642585

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B29-15.0-15.5**
Lab Sample Id: 642585-006

Matrix: Soil
Date Collected: 11.07.2019 08:55

Date Received:11.08.2019 11:00
Sample Depth: 15.0 - 15.5

Analytical Method: PAHs by 8270D SIM
Tech: AHI
Analyst: DNE
Seq Number: 3107146

Date Prep: 11.11.2019 15:06

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.12.2019 04:04		1
Acenaphthylene	208-96-8	**0.00628**	0.00167	mg/kg	11.12.2019 04:04		1
Anthracene	120-12-7	**0.00384**	0.00167	mg/kg	11.12.2019 04:04		1
Benzo(a)anthracene	56-55-3	**0.0376**	0.00167	mg/kg	11.12.2019 04:04		1
Benzo(a)pyrene	50-32-8	**0.0772**	0.00167	mg/kg	11.12.2019 04:04		1
Benzo(b)fluoranthene	205-99-2	**0.0766**	0.00167	mg/kg	11.12.2019 04:04		1
Benzo(g,h,i)perylene	191-24-2	**0.0918**	0.00167	mg/kg	11.12.2019 04:04		1
Benzo(k)fluoranthene	207-08-9	**0.0253**	0.00167	mg/kg	11.12.2019 04:04		1
Chrysene	218-01-9	**0.0460**	0.00167	mg/kg	11.12.2019 04:04		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.12.2019 04:04		1
Fluoranthene	206-44-0	**0.0870**	0.00167	mg/kg	11.12.2019 04:04		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.12.2019 04:04		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0620**	0.00167	mg/kg	11.12.2019 04:04		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.12.2019 04:04		1
Phenanthrene	85-01-8	**0.0250**	0.00167	mg/kg	11.12.2019 04:04		1
Pyrene	129-00-0	**0.138**	0.00167	mg/kg	11.12.2019 04:04		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	132	%	31-130	11.12.2019 04:04	S10
2-Fluorobiphenyl	106	%	51-133	11.12.2019 04:04	
Terphenyl-D14	119	%	46-137	11.12.2019 04:04	

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B29-20.0-20.5**
Matrix: Soil
Date Received:11.08.2019 11:00
Lab Sample Id: 642585-007
Date Collected: 11.07.2019 09:10
Sample Depth: 20.0 - 20.5

Analytical Method: Mercury by SW 7471B
Prep Method: SW7471P
Tech: ADS
% Moisture:
Analyst: ANJ
Date Prep: 11.12.2019 11:10
Basis: Wet Weight
Seq Number: 3107216
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	BRL	0.0189	mg/kg	11.12.2019 17:06		1

Analytical Method: Metals, RCRA List, by SW 6020
Prep Method: SW3050B
Tech: PJB
% Moisture:
Analyst: DEP
Date Prep: 11.10.2019 14:00
Basis: Wet Weight
Seq Number: 3107032
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**22.5**	1.75	mg/kg	11.11.2019 12:28	D2	10
Barium	7440-39-3	**275**	3.51	mg/kg	11.11.2019 12:28	D2	10
Cadmium	7440-43-9	BRL	1.75	mg/kg	11.11.2019 12:28	D1	10
Chromium	7440-47-3	**12.4**	3.51	mg/kg	11.11.2019 12:28	D2	10
Lead	7439-92-1	**14.1**	1.75	mg/kg	11.11.2019 12:28	D2	10
Selenium	7782-49-2	BRL	1.75	mg/kg	11.11.2019 12:28	D1	10
Silver	7440-22-4	BRL	1.75	mg/kg	11.11.2019 12:28	D1	10

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APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-B29-20.0-20.5**
Lab Sample Id: 642585-007

Matrix: Soil
Date Collected: 11.07.2019 09:10

Date Received:11.08.2019 11:00
Sample Depth: 20.0 - 20.5

Analytical Method: PAHs by 8270D SIM
Tech: AHI
Analyst: DNE
Seq Number: 3107146

Date Prep: 11.11.2019 15:09

Prep Method: SW3550
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	BRL	0.00167	mg/kg	11.12.2019 13:10		1
Acenaphthylene	208-96-8	**0.00219**	0.00167	mg/kg	11.12.2019 13:10		1
Anthracene	120-12-7	**0.00183**	0.00167	mg/kg	11.12.2019 13:10		1
Benzo(a)anthracene	56-55-3	**0.0120**	0.00167	mg/kg	11.12.2019 13:10		1
Benzo(a)pyrene	50-32-8	**0.0220**	0.00167	mg/kg	11.12.2019 13:10		1
Benzo(b)fluoranthene	205-99-2	**0.0257**	0.00167	mg/kg	11.12.2019 13:10		1
Benzo(g,h,i)perylene	191-24-2	**0.0165**	0.00167	mg/kg	11.12.2019 13:10		1
Benzo(k)fluoranthene	207-08-9	**0.00794**	0.00167	mg/kg	11.12.2019 13:10		1
Chrysene	218-01-9	**0.0143**	0.00167	mg/kg	11.12.2019 13:10		1
Dibenz(a,h)Anthracene	53-70-3	BRL	0.00167	mg/kg	11.12.2019 13:10		1
Fluoranthene	206-44-0	**0.0280**	0.00167	mg/kg	11.12.2019 13:10		1
Fluorene	86-73-7	BRL	0.00167	mg/kg	11.12.2019 13:10		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0128**	0.00167	mg/kg	11.12.2019 13:10		1
Naphthalene	91-20-3	BRL	0.0167	mg/kg	11.12.2019 13:10		1
Phenanthrene	85-01-8	**0.00921**	0.00167	mg/kg	11.12.2019 13:10		1
Pyrene	129-00-0	**0.0409**	0.00167	mg/kg	11.12.2019 13:10		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	133	%	31-130	11.12.2019 13:10	S10
2-Fluorobiphenyl	108	%	51-133	11.12.2019 13:10	
Terphenyl-D14	111	%	46-137	11.12.2019 13:10	

Certificate of Analytical Results 642585

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-110719**
Lab Sample Id: 642585-008

Matrix: Soil
Date Collected: 11.07.2019 08:00

Date Received:11.08.2019 11:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107033

Date Prep: 11.08.2019 16:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,1,1-Trichloroethane	71-55-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,1,2,2-Tetrachloroethane	79-34-5	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,1,2-Trichloroethane	79-00-5	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,1-Dichloroethane	75-34-3	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,1-Dichloroethene	75-35-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,1-Dichloropropene	563-58-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2,3-Trichlorobenzene	87-61-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2,3-Trichloropropane	96-18-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2,4-Trichlorobenzene	120-82-1	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2,4-Trimethylbenzene	95-63-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2-Dibromoethane	106-93-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2-Dichlorobenzene	95-50-1	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2-Dichloroethane	107-06-2	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,2-Dichloropropane	78-87-5	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,3,5-Trimethylbenzene	108-67-8	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,3-Dichlorobenzene	541-73-1	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,3-Dichloropropane	142-28-9	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,4-Dichlorobenzene	106-46-7	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
2,2-Dichloropropane	594-20-7	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
2-Butanone	78-93-3	BRL	1.00	mg/kg	11.09.2019 01:36	U	50
2-Chlorotoluene	95-49-8	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
2-Hexanone	591-78-6	BRL	2.50	mg/kg	11.09.2019 01:36	U	50
4-Chlorotoluene	106-43-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
4-Methyl-2-Pentanone	108-10-1	BRL	2.50	mg/kg	11.09.2019 01:36	U	50
Acetone	67-64-1	BRL	5.00	mg/kg	11.11.2019 17:43	UD	50
Benzene	71-43-2	BRL	0.0500	mg/kg	11.09.2019 01:36	U	50
Bromobenzene	108-86-1	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Bromochloromethane	74-97-5	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Bromodichloromethane	75-27-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Bromoform	75-25-2	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Bromomethane	74-83-9	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Carbon Disulfide	75-15-0	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Carbon Tetrachloride	56-23-5	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Chlorobenzene	108-90-7	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Chloroethane	75-00-3	BRL	0.500	mg/kg	11.09.2019 01:36	U	50
Chloroform	67-66-3	BRL	0.250	mg/kg	11.09.2019 01:36	U	50

Certificate of Analytical Results 642585

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-110719**
Lab Sample Id: 642585-008

Matrix: Soil
Date Collected: 11.07.2019 08:00

Date Received:11.08.2019 11:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107033

Date Prep: 11.08.2019 16:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
cis-1,2-Dichloroethene	156-59-2	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
cis-1,3-Dichloropropene	10061-01-5	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Dibromochloromethane	124-48-1	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Dibromomethane	74-95-3	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Dichlorodifluoromethane	75-71-8	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Ethylbenzene	100-41-4	BRL	0.0500	mg/kg	11.09.2019 01:36	U	50
Hexachlorobutadiene	87-68-3	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Iodomethane (Methyl Iodide)	74-88-4	BRL	1.00	mg/kg	11.11.2019 17:43	UD	50
Isopropylbenzene	98-82-8	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
m,p-Xylenes	179601-23-1	BRL	0.100	mg/kg	11.09.2019 01:36	U	50
Methylene Chloride	75-09-2	BRL	1.00	mg/kg	11.09.2019 01:36	U	50
MTBE	1634-04-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Naphthalene	91-20-3	BRL	0.500	mg/kg	11.09.2019 01:36	U	50
n-Butylbenzene	104-51-8	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
n-Propylbenzene	103-65-1	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
o-Xylene	95-47-6	BRL	0.0500	mg/kg	11.09.2019 01:36	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Sec-Butylbenzene	135-98-8	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Styrene	100-42-5	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
tert-Butylbenzene	98-06-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Tetrachloroethylene	127-18-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Toluene	108-88-3	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Total Xylenes	1330-20-7	BRL	0.0500	mg/kg	11.09.2019 01:36	U	50
trans-1,2-dichloroethene	156-60-5	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
trans-1,3-dichloropropene	10061-02-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Trichloroethene	79-01-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Trichlorofluoromethane	75-69-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Vinyl Acetate	108-05-4	BRL	0.500	mg/kg	11.09.2019 01:36	U	50
Vinyl Chloride	75-01-4	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
1,3-Butadiene	106-99-0	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Cyclohexane	110-82-7	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Dicyclopentadiene	77-73-6	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Methylcyclohexane	108-87-2	BRL	0.500	mg/kg	11.09.2019 01:36	U	50
n-Hexane	110-54-3	BRL	0.500	mg/kg	11.11.2019 17:43	UD	50
4-Ethyltoluene	622-96-8	BRL	0.250	mg/kg	11.09.2019 01:36	U	50
Propene	115-07-1	BRL	0.250	mg/kg	11.11.2019 17:43	UD	50

Certificate of Analytical Results 642585

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB01-110719**
Lab Sample Id: 642585-008

Matrix: Soil
Date Collected: 11.07.2019 08:00

Date Received:11.08.2019 11:00

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107033

Date Prep: 11.08.2019 16:30

Prep Method: SW5035A
% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	95	%	53-142	11.09.2019 01:36	
1,2-Dichloroethane-D4	100	%	56-150	11.09.2019 01:36	
Toluene-D8	103	%	70-130	11.09.2019 01:36	
4-Bromofluorobenzene	99	%	68-152	11.09.2019 01:36	

APS

APS MGP Douglas, AZ

Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3107194 Matrix: Solid Date Prep: 11.12.2019
MB Sample Id: 7690106-1-BLK LCS Sample Id: 7690106-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Cyanide, Total	<0.0286	1.15	1.11	97	85-115	mg/kg	11.12.2019 15:33	

Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3107194 Matrix: Soil Date Prep: 11.12.2019
Parent Sample Id: 642585-004 MS Sample Id: 642585-004 S MSD Sample Id: 642585-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	<0.0297	2.39	1.89	79	1.84	76	85-115	3	20	mg/kg	11.12.2019 15:48	M2

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3107216 Matrix: Solid Date Prep: 11.12.2019
MB Sample Id: 7690147-1-BLK LCS Sample Id: 7690147-1-BKS LCSD Sample Id: 7690147-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00349	0.182	0.191	105	0.189	104	80-120	1	20	mg/kg	11.12.2019 16:38	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3107216 Matrix: Soil Date Prep: 11.12.2019
Parent Sample Id: 642585-003 MS Sample Id: 642585-003 S MSD Sample Id: 642585-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00384	0.200	0.212	106	0.193	106	75-125	9	20	mg/kg	11.12.2019 16:47	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3107216 Matrix: Soil Date Prep: 11.12.2019
Parent Sample Id: 642585-004 MS Sample Id: 642585-004 S MSD Sample Id: 642585-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0494	0.196	0.234	94	0.239	95	75-125	2	20	mg/kg	11.12.2019 17:21	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

APS

APS MGP Douglas, AZ

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3107032 Matrix: Solid Date Prep: 11.10.2019
MB Sample Id: 7689988-1-BLK LCS Sample Id: 7689988-1-BKS LCSD Sample Id: 7689988-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	10.2	102	10.1	101	80-120	1	20	mg/kg	11.11.2019 11:35	
Barium	<0.400	10.0	9.76	98	9.70	97	80-120	1	20	mg/kg	11.11.2019 11:35	
Cadmium	<0.200	10.0	10.0	100	10.0	100	80-120	0	20	mg/kg	11.11.2019 11:35	
Chromium	<0.400	10.0	10.0	100	10.0	100	80-120	0	20	mg/kg	11.11.2019 11:35	
Lead	<0.200	10.0	10.2	102	10.1	101	80-120	1	20	mg/kg	11.11.2019 11:35	
Selenium	<0.200	10.0	10.4	104	10.2	102	80-120	2	20	mg/kg	11.11.2019 11:35	
Silver	<0.200	5.00	5.05	101	5.06	101	80-120	0	20	mg/kg	11.11.2019 11:35	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3107121 Matrix: Solid Date Prep: 11.11.2019
MB Sample Id: 7690070-1-BLK LCS Sample Id: 7690070-1-BKS LCSD Sample Id: 7690070-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	9.71	97	9.73	97	80-120	0	20	mg/kg	11.11.2019 23:12	
Barium	<0.400	10.0	9.44	94	9.46	95	80-120	0	20	mg/kg	11.11.2019 23:12	
Cadmium	<0.200	10.0	9.78	98	9.53	95	80-120	3	20	mg/kg	11.11.2019 23:12	
Chromium	<0.400	10.0	9.78	98	9.64	96	80-120	1	20	mg/kg	11.11.2019 23:12	
Lead	<0.200	10.0	9.68	97	9.60	96	80-120	1	20	mg/kg	11.11.2019 23:12	
Selenium	<0.200	10.0	9.81	98	9.85	99	80-120	0	20	mg/kg	11.11.2019 23:12	
Silver	<0.200	5.00	5.09	102	4.96	99	80-120	3	20	mg/kg	11.11.2019 23:12	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3107032 Matrix: Soil Date Prep: 11.10.2019
Parent Sample Id: 642585-004 MS Sample Id: 642585-004 S MSD Sample Id: 642585-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	15.9	9.62	28.4	130	27.3	121	75-125	4	30	mg/kg	11.11.2019 12:04	M1
Barium	178	9.62	211	343	201	244	75-125	5	30	mg/kg	11.11.2019 12:04	M1
Cadmium	<1.92	9.62	11.4	119	11.2	119	75-125	2	30	mg/kg	11.11.2019 12:04	
Chromium	18.1	9.62	30.5	129	30.0	126	75-125	2	30	mg/kg	11.11.2019 12:04	M1
Lead	32.8	9.62	46.8	146	45.2	131	75-125	3	30	mg/kg	11.11.2019 12:04	M1
Selenium	<1.92	9.62	11.4	119	11.2	119	75-125	2	30	mg/kg	11.11.2019 12:04	
Silver	<1.92	4.81	3.45	72	3.41	72	75-125	1	30	mg/kg	11.11.2019 12:04	M2

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

APS

APS MGP Douglas, AZ

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3107121 Matrix: Soil Date Prep: 11.11.2019
Parent Sample Id: 642585-003 MS Sample Id: 642585-003 S MSD Sample Id: 642585-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	12.6	8.33	19.7	85	20.7	97	75-125	5	30	mg/kg	11.11.2019 23:21	
Barium	767	8.33	700	0	726	0	75-125	4	30	mg/kg	11.11.2019 23:21	X
Cadmium	<1.67	8.33	8.89	107	9.23	111	75-125	4	30	mg/kg	11.11.2019 23:21	
Chromium	10.6	8.33	19.0	101	19.9	112	75-125	5	30	mg/kg	11.11.2019 23:21	
Lead	7.26	8.33	15.6	100	16.3	109	75-125	4	30	mg/kg	11.11.2019 23:21	
Selenium	<1.67	8.33	8.90	107	9.19	110	75-125	3	30	mg/kg	11.11.2019 23:21	
Silver	<1.67	4.17	4.96	119	5.19	124	75-125	5	30	mg/kg	11.11.2019 23:21	

Analytical Method: **Flash Point (CC) SW-846 1010**
Seq Number: 3107086 Matrix: Soil
Parent Sample Id: 642442-001 MD Sample Id: 642442-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	>180	>180	0	25	Deg F	11.11.2019 10:22	

Analytical Method: **Paint Filter Liquids Test by SW 9095B**
Seq Number: 3107180 Matrix: Soil
Parent Sample Id: 642585-004 MD Sample Id: 642585-004 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	0		11.12.2019 14:16	

Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3107068 Matrix: Soil
Parent Sample Id: 642366-010 MD Sample Id: 642366-010 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	7.41	7.42	0	20	SU	11.11.2019 15:05	
Temperature	22.7	22.8	0	25	Deg C	11.11.2019 15:05	

Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3107068 Matrix: Soil
Parent Sample Id: 642585-004 MD Sample Id: 642585-004 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.42	8.43	0	20	SU	11.11.2019 15:05	
Temperature	23.0	23.2	1	25	Deg C	11.11.2019 15:05	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 642585

APS

APS MGP Douglas, AZ

Analytical Method: **PCBs by SW-846 8082A** Prep Method: SW3550
Seq Number: 3107178 Matrix: Solid Date Prep: 11.11.2019
MB Sample Id: 7690084-1-BLK LCS Sample Id: 7690084-1-BKS LCSD Sample Id: 7690084-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0167	0.167	0.104	62	0.113	68	54-121	8	20	mg/kg	11.11.2019 18:34	
PCB-1260	<0.0167	0.167	0.117	70	0.122	73	41-126	4	20	mg/kg	11.11.2019 18:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	90		89		91		39-125	%	11.11.2019 18:34
Tetrachloro-m-xylene	53		54		61		37-124	%	11.11.2019 18:34

Analytical Method: **PCBs by SW-846 8082A** Prep Method: SW3550
Seq Number: 3107178 Matrix: Soil Date Prep: 11.11.2019
Parent Sample Id: 642585-004 MS Sample Id: 642585-004 S MSD Sample Id: 642585-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0166	0.166	0.124	75	0.110	66	54-121	12	20	mg/kg	11.12.2019 00:03	
PCB-1260	<0.0166	0.166	0.145	87	0.134	81	41-126	8	20	mg/kg	11.12.2019 00:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	112		102		39-125	%	11.12.2019 00:03
Tetrachloro-m-xylene	65		59		37-124	%	11.12.2019 00:03

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642585

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3107146 Matrix: Solid Date Prep: 11.11.2019

MB Sample Id: 7690085-1-BLK LCS Sample Id: 7690085-1-BKS LCSD Sample Id: 7690085-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0233	70	0.0282	85	42-116	19	25	mg/kg	11.12.2019 11:47	
Acenaphthylene	<0.00167	0.0333	0.0229	69	0.0274	82	42-121	18	25	mg/kg	11.12.2019 11:47	
Anthracene	<0.00167	0.0333	0.0240	72	0.0288	86	44-120	18	25	mg/kg	11.12.2019 11:47	
Benzo(a)anthracene	<0.00167	0.0333	0.0263	79	0.0301	90	52-121	13	25	mg/kg	11.12.2019 11:47	
Benzo(a)pyrene	<0.00167	0.0333	0.0264	79	0.0303	91	50-128	14	25	mg/kg	11.12.2019 11:47	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0277	83	0.0319	96	49-137	14	25	mg/kg	11.12.2019 11:47	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0250	75	0.0281	84	47-132	12	25	mg/kg	11.12.2019 11:47	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0282	85	0.0318	95	48-133	12	25	mg/kg	11.12.2019 11:47	
Chrysene	<0.00167	0.0333	0.0258	77	0.0291	87	54-113	12	25	mg/kg	11.12.2019 11:47	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0269	81	0.0302	91	48-133	12	25	mg/kg	11.12.2019 11:47	
Fluoranthene	<0.00167	0.0333	0.0250	75	0.0294	88	54-128	16	25	mg/kg	11.12.2019 11:47	
Fluorene	<0.00167	0.0333	0.0240	72	0.0287	86	44-118	18	25	mg/kg	11.12.2019 11:47	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0265	80	0.0297	89	49-129	11	25	mg/kg	11.12.2019 11:47	
Naphthalene	<0.0167	0.0333	0.0229	69	0.0274	82	40-135	18	25	mg/kg	11.12.2019 11:47	
Phenanthrene	<0.00167	0.0333	0.0249	75	0.0297	89	44-119	18	25	mg/kg	11.12.2019 11:47	
Pyrene	<0.00167	0.0333	0.0273	82	0.0319	96	50-126	16	25	mg/kg	11.12.2019 11:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	123		111		135	S10	31-130	%	11.12.2019 11:47
2-Fluorobiphenyl	101		91		107		51-133	%	11.12.2019 11:47
Terphenyl-D14	116		103		116		46-137	%	11.12.2019 11:47

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550
Seq Number: 3107146 Matrix: Soil Date Prep: 11.11.2019
Parent Sample Id: 642585-003 MS Sample Id: 642585-003 S MSD Sample Id: 642585-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0334	0.0288	86	0.0288	86	42-116	0	25	mg/kg	11.12.2019 02:41	
Acenaphthylene	<0.00167	0.0334	0.0281	84	0.0281	84	42-121	0	25	mg/kg	11.12.2019 02:41	
Anthracene	<0.00167	0.0334	0.0290	87	0.0287	86	44-120	1	25	mg/kg	11.12.2019 02:41	
Benzo(a)anthracene	<0.00167	0.0334	0.0317	95	0.0311	93	52-121	2	25	mg/kg	11.12.2019 02:41	
Benzo(a)pyrene	<0.00167	0.0334	0.0306	92	0.0304	91	50-128	1	25	mg/kg	11.12.2019 02:41	
Benzo(b)fluoranthene	<0.00167	0.0334	0.0342	102	0.0335	100	49-137	2	25	mg/kg	11.12.2019 02:41	
Benzo(g,h,i)perylene	<0.00167	0.0334	0.0318	95	0.0316	95	47-132	1	25	mg/kg	11.12.2019 02:41	
Benzo(k)fluoranthene	<0.00167	0.0334	0.0320	96	0.0326	98	48-133	2	25	mg/kg	11.12.2019 02:41	
Chrysene	<0.00167	0.0334	0.0304	91	0.0301	90	54-113	1	25	mg/kg	11.12.2019 02:41	
Dibenz(a,h)Anthracene	<0.00167	0.0334	0.0328	98	0.0326	98	48-133	1	25	mg/kg	11.12.2019 02:41	
Fluoranthene	<0.00167	0.0334	0.0300	90	0.0295	88	54-128	2	25	mg/kg	11.12.2019 02:41	
Fluorene	<0.00167	0.0334	0.0293	88	0.0293	88	44-118	0	25	mg/kg	11.12.2019 02:41	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0334	0.0325	97	0.0323	97	49-129	1	25	mg/kg	11.12.2019 02:41	
Naphthalene	<0.0167	0.0334	0.0288	86	0.0288	86	40-135	0	25	mg/kg	11.12.2019 02:41	
Phenanthrene	<0.00167	0.0334	0.0307	92	0.0303	91	44-119	1	25	mg/kg	11.12.2019 02:41	
Pyrene	<0.00167	0.0334	0.0334	100	0.0325	97	50-126	3	25	mg/kg	11.12.2019 02:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	141	S10	139	S10	31-130	%	11.12.2019 02:41
2-Fluorobiphenyl	110		110		51-133	%	11.12.2019 02:41
Terphenyl-D14	122		119		46-137	%	11.12.2019 02:41

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550
Seq Number: 3107146 Matrix: Soil Date Prep: 11.11.2019
Parent Sample Id: 642585-004 MS Sample Id: 642585-004 S MSD Sample Id: 642585-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00166	0.0333	0.0278	83	0.0240	72	42-116	15	25	mg/kg	11.12.2019 12:37	
Acenaphthylene	0.00226	0.0333	0.0298	83	0.0271	75	42-121	9	25	mg/kg	11.12.2019 12:37	
Anthracene	0.00157	0.0333	0.0316	90	0.0287	81	44-120	10	25	mg/kg	11.12.2019 12:37	
Benzo(a)anthracene	0.00661	0.0333	0.0361	89	0.0390	97	52-121	8	25	mg/kg	11.12.2019 12:37	
Benzo(a)pyrene	0.00983	0.0333	0.0414	95	0.0487	117	50-128	16	25	mg/kg	11.12.2019 12:37	
Benzo(b)fluoranthene	0.0122	0.0333	0.0413	87	0.0584	139	49-137	34	25	mg/kg	11.12.2019 12:37	M1R2
Benzo(g,h,i)perylene	0.0102	0.0333	0.0337	71	0.0304	61	47-132	10	25	mg/kg	11.12.2019 12:37	
Benzo(k)fluoranthene	0.00358	0.0333	0.0367	99	0.0355	96	48-133	3	25	mg/kg	11.12.2019 12:37	
Chrysene	0.00777	0.0333	0.0364	86	0.0397	96	54-113	9	25	mg/kg	11.12.2019 12:37	
Dibenz(a,h)Anthracene	<0.00166	0.0333	0.0289	87	0.0212	64	48-133	31	25	mg/kg	11.12.2019 12:37	R5
Fluoranthene	0.0157	0.0333	0.0453	89	0.0544	116	54-128	18	25	mg/kg	11.12.2019 12:37	
Fluorene	<0.00166	0.0333	0.0290	87	0.0250	75	44-118	15	25	mg/kg	11.12.2019 12:37	
Indeno(1,2,3-c,d)Pyrene	0.00727	0.0333	0.0337	79	0.0297	67	49-129	13	25	mg/kg	11.12.2019 12:37	
Naphthalene	0.00256	0.0333	0.0293	80	0.0248	67	40-135	17	25	mg/kg	11.12.2019 12:37	
Phenanthrene	0.0120	0.0333	0.0418	89	0.0425	92	44-119	2	25	mg/kg	11.12.2019 12:37	
Pyrene	0.0211	0.0333	0.0511	90	0.0638	128	50-126	22	25	mg/kg	11.12.2019 12:37	M1

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	129		119		31-130	%	11.12.2019 12:37
2-Fluorobiphenyl	105		88		51-133	%	11.12.2019 12:37
Terphenyl-D14	113		91		46-137	%	11.12.2019 12:37

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642585

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107033 Matrix: Solid Date Prep: 11.08.2019

MB Sample Id: 7690047-1-BLK LCS Sample Id: 7690047-1-BKS LCSD Sample Id: 7690047-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0489	98	0.0451	90	72-125	8	25	mg/kg	11.08.2019 22:21	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0441	88	0.0412	82	75-125	7	25	mg/kg	11.08.2019 22:21	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0511	102	0.0502	100	74-125	2	25	mg/kg	11.08.2019 22:21	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0488	98	0.0487	97	75-127	0	25	mg/kg	11.08.2019 22:21	
1,1-Dichloroethane	<0.00500	0.0500	0.0485	97	0.0451	90	72-125	7	25	mg/kg	11.08.2019 22:21	
1,1-Dichloroethene	<0.00500	0.0500	0.0444	89	0.0407	81	59-172	9	25	mg/kg	11.08.2019 22:21	
1,1-Dichloropropene	<0.00500	0.0500	0.0452	90	0.0429	86	75-125	5	25	mg/kg	11.08.2019 22:21	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0493	99	0.0471	94	75-137	5	25	mg/kg	11.08.2019 22:21	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0493	99	0.0484	97	75-125	2	25	mg/kg	11.08.2019 22:21	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0464	93	0.0437	87	75-135	6	25	mg/kg	11.08.2019 22:21	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0455	91	0.0430	86	75-125	6	25	mg/kg	11.08.2019 22:21	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0518	104	0.0507	101	59-125	2	25	mg/kg	11.08.2019 22:21	
1,2-Dibromoethane	<0.00500	0.0500	0.0481	96	0.0477	95	73-125	1	25	mg/kg	11.08.2019 22:21	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0481	96	0.0456	91	75-125	5	25	mg/kg	11.08.2019 22:21	
1,2-Dichloroethane	<0.00500	0.0500	0.0463	93	0.0448	90	68-127	3	25	mg/kg	11.08.2019 22:21	
1,2-Dichloropropane	<0.00500	0.0500	0.0469	94	0.0454	91	74-125	3	25	mg/kg	11.08.2019 22:21	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0494	99	0.0461	92	70-130	7	25	mg/kg	11.08.2019 22:21	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0460	92	0.0446	89	75-125	3	25	mg/kg	11.08.2019 22:21	
1,3-Dichloropropane	<0.00500	0.0500	0.0511	102	0.0501	100	75-125	2	25	mg/kg	11.08.2019 22:21	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0456	91	0.0438	88	75-125	4	25	mg/kg	11.08.2019 22:21	
2,2-Dichloropropane	<0.00500	0.0500	0.0447	89	0.0424	85	75-125	5	25	mg/kg	11.08.2019 22:21	
2-Butanone	<0.0200	0.250	0.202	81	0.210	84	75-125	4	25	mg/kg	11.08.2019 22:21	
2-Chlorotoluene	<0.00500	0.0500	0.0473	95	0.0448	90	73-125	5	25	mg/kg	11.08.2019 22:21	
2-Hexanone	<0.0500	0.250	0.227	91	0.245	98	75-125	8	25	mg/kg	11.08.2019 22:21	
4-Chlorotoluene	<0.00500	0.0500	0.0465	93	0.0448	90	74-125	4	25	mg/kg	11.08.2019 22:21	
4-Methyl-2-Pentanone	<0.0500	0.250	0.244	98	0.252	101	60-140	3	25	mg/kg	11.08.2019 22:21	
Acetone	<0.100	0.250	0.156	62	0.155	62	50-150	1	25	mg/kg	11.08.2019 22:21	
Benzene	<0.00100	0.0500	0.0449	90	0.0428	86	66-142	5	25	mg/kg	11.08.2019 22:21	
Bromobenzene	<0.00500	0.0500	0.0479	96	0.0460	92	75-125	4	25	mg/kg	11.08.2019 22:21	
Bromochloromethane	<0.00500	0.0500	0.0481	96	0.0448	90	60-140	7	25	mg/kg	11.08.2019 22:21	
Bromodichloromethane	<0.00500	0.0500	0.0487	97	0.0469	94	75-125	4	25	mg/kg	11.08.2019 22:21	
Bromoform	<0.00500	0.0500	0.0547	109	0.0545	109	75-125	0	25	mg/kg	11.08.2019 22:21	
Bromomethane	<0.00500	0.0500	0.0359	72	0.0331	66	60-140	8	25	mg/kg	11.08.2019 22:21	
Carbon Disulfide	<0.00500	0.0500	0.0452	90	0.0411	82	60-140	10	25	mg/kg	11.08.2019 22:21	
Carbon Tetrachloride	<0.00500	0.0500	0.0445	89	0.0418	84	62-125	6	25	mg/kg	11.08.2019 22:21	
Chlorobenzene	<0.00500	0.0500	0.0455	91	0.0439	88	60-133	4	25	mg/kg	11.08.2019 22:21	
Chloroethane	<0.0100	0.0500	0.0352	70	0.0313	63	60-140	12	25	mg/kg	11.08.2019 22:21	
Chloroform	<0.00500	0.0500	0.0474	95	0.0445	89	74-125	6	25	mg/kg	11.08.2019 22:21	
Chloromethane	<0.00500	0.0500	0.0429	86	0.0400	80	60-140	7	25	mg/kg	11.08.2019 22:21	
cis-1,2-Dichloroethene	<0.00500	0.0500	0.0465	93	0.0434	87	75-125	7	25	mg/kg	11.08.2019 22:21	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0497	99	0.0489	98	74-125	2	25	mg/kg	11.08.2019 22:21	
Dibromochloromethane	<0.00500	0.0500	0.0508	102	0.0496	99	73-125	2	25	mg/kg	11.08.2019 22:21	
Dibromomethane	<0.00500	0.0500	0.0479	96	0.0463	93	69-127	3	25	mg/kg	11.08.2019 22:21	
Dichlorodifluoromethane	<0.00500	0.0500	0.0598	120	0.0537	107	65-135	11	25	mg/kg	11.08.2019 22:21	
Ethylbenzene	<0.00100	0.0500	0.0453	91	0.0438	88	75-125	3	25	mg/kg	11.08.2019 22:21	
Hexachlorobutadiene	<0.00500	0.0500	0.0477	95	0.0445	89	75-125	7	25	mg/kg	11.08.2019 22:21	
Iodomethane (Methyl Iodide)	<0.0200	0.0500	0.0378	76	0.0344	69	75-125	9	25	mg/kg	11.08.2019 22:21	L
Isopropylbenzene	<0.00500	0.0500	0.0488	98	0.0460	92	75-125	6	25	mg/kg	11.08.2019 22:21	
m,p-Xylenes	<0.00200	0.100	0.0900	90	0.0877	88	75-125	3	25	mg/kg	11.08.2019 22:21	
Methylene Chloride	<0.0200	0.0500	0.0516	103	0.0477	95	75-125	8	25	mg/kg	11.08.2019 22:21	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642585

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107033 Matrix: Solid Date Prep: 11.08.2019

MB Sample Id: 7690047-1-BLK LCS Sample Id: 7690047-1-BKS LCSD Sample Id: 7690047-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.00500	0.0500	0.0489	98	0.0467	93	60-140	5	25	mg/kg	11.08.2019 22:21	
Naphthalene	<0.0100	0.0500	0.0550	110	0.0532	106	70-130	3	25	mg/kg	11.08.2019 22:21	
n-Butylbenzene	<0.00500	0.0500	0.0439	88	0.0421	84	75-125	4	25	mg/kg	11.08.2019 22:21	
n-Propylbenzene	<0.00500	0.0500	0.0459	92	0.0437	87	75-125	5	25	mg/kg	11.08.2019 22:21	
o-Xylene	<0.00100	0.0500	0.0488	98	0.0465	93	75-125	5	25	mg/kg	11.08.2019 22:21	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0440	88	0.0415	83	75-125	6	25	mg/kg	11.08.2019 22:21	
Sec-Butylbenzene	<0.00500	0.0500	0.0468	94	0.0439	88	75-125	6	25	mg/kg	11.08.2019 22:21	
Styrene	<0.00500	0.0500	0.0479	96	0.0468	94	75-125	2	25	mg/kg	11.08.2019 22:21	
tert-Butylbenzene	<0.00500	0.0500	0.0531	106	0.0492	98	75-125	8	25	mg/kg	11.08.2019 22:21	
Tetrachloroethylene	<0.00500	0.0500	0.0424	85	0.0414	83	71-125	2	25	mg/kg	11.08.2019 22:21	
Toluene	<0.00500	0.0500	0.0446	89	0.0428	86	59-139	4	25	mg/kg	11.08.2019 22:21	
trans-1,2-dichloroethene	<0.00500	0.0500	0.0445	89	0.0411	82	75-125	8	25	mg/kg	11.08.2019 22:21	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0497	99	0.0496	99	66-125	0	25	mg/kg	11.08.2019 22:21	
Trichloroethene	<0.00500	0.0500	0.0404	81	0.0389	78	62-137	4	25	mg/kg	11.08.2019 22:21	
Trichlorofluoromethane	<0.00500	0.0500	0.0388	78	0.0357	71	67-125	8	25	mg/kg	11.08.2019 22:21	
Vinyl Acetate	<0.0100	0.250	0.205	82	0.201	80	60-140	2	25	mg/kg	11.08.2019 22:21	
Vinyl Chloride	<0.00500	0.0500	0.0409	82	0.0374	75	60-140	9	25	mg/kg	11.08.2019 22:21	
1,3-Butadiene	<0.00500	0.0500	0.0434	87	0.0389	78	70-130	11	25	mg/kg	11.08.2019 22:21	
Cyclohexane	<0.00500	0.0500	0.0384	77	0.0356	71	70-130	8	25	mg/kg	11.08.2019 22:21	
Dicyclopentadiene	<0.00500	0.0500	0.0415	83	0.0382	76	70-120	8	25	mg/kg	11.08.2019 22:21	
Methylcyclohexane	<0.0100	0.0500	0.0399	80	0.0372	74	65-135	7	25	mg/kg	11.08.2019 22:21	
n-Hexane	<0.0100	0.0500	0.0361	72	0.0346	69	72-125	4	25	mg/kg	11.08.2019 22:21	L
4-Ethyltoluene	<0.00500	0.0500	0.0443	89	0.0427	85	70-130	4	25	mg/kg	11.08.2019 22:21	
Propene	<0.00500	0.0500	0.0354	71	0.0317	63	70-130	11	25	mg/kg	11.08.2019 22:21	L

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	98		100		99		53-142	%	11.08.2019 22:21
1,2-Dichloroethane-D4	97		96		100		56-150	%	11.08.2019 22:21
Toluene-D8	100		101		100		70-130	%	11.08.2019 22:21
4-Bromofluorobenzene	99		99		100		68-152	%	11.08.2019 22:21

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 642585

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107061 Matrix: Solid Date Prep: 11.11.2019

MB Sample Id: 7690080-1-BLK LCS Sample Id: 7690080-1-BKS LCSD Sample Id: 7690080-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetone	<0.100	0.250	0.153	61	0.156	62	50-150	2	25	mg/kg	11.11.2019 10:30	
Iodomethane (Methyl Iodide)	<0.0200	0.0500	0.0408	82	0.0417	83	75-125	2	25	mg/kg	11.11.2019 10:30	
m,p-Xylenes	<0.00200	0.100	0.101	101	0.102	102	75-125	1	25	mg/kg	11.11.2019 10:30	
o-Xylene	<0.00100	0.0500	0.0518	104	0.0537	107	75-125	4	25	mg/kg	11.11.2019 10:30	
n-Hexane	<0.0100	0.0500	0.0431	86	0.0432	86	72-125	0	25	mg/kg	11.11.2019 10:30	
Propene	<0.00500	0.0500	0.0423	85	0.0429	86	70-130	1	25	mg/kg	11.11.2019 10:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	105		98		100		53-142	%	11.11.2019 10:30
1,2-Dichloroethane-D4	99		96		97		56-150	%	11.11.2019 10:30
Toluene-D8	101		100		102		70-130	%	11.11.2019 10:30
4-Bromofluorobenzene	97		99		100		68-152	%	11.11.2019 10:30

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107033 Matrix: Soil Date Prep: 11.08.2019

Parent Sample Id: 642585-004 MS Sample Id: 642585-004 S MSD Sample Id: 642585-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.245	2.45	1.99	81	2.00	82	72-125	1	25	mg/kg	11.08.2019 23:04	
1,1,1-Trichloroethane	<0.245	2.45	1.82	74	1.86	76	75-125	2	25	mg/kg	11.08.2019 23:04	X
1,1,2,2-Tetrachloroethane	<0.245	2.45	2.21	90	2.15	88	74-125	3	25	mg/kg	11.08.2019 23:04	
1,1,2-Trichloroethane	<0.245	2.45	2.28	93	2.22	91	75-127	3	25	mg/kg	11.08.2019 23:04	
1,1-Dichloroethane	<0.245	2.45	2.02	82	2.09	85	72-125	3	25	mg/kg	11.08.2019 23:04	
1,1-Dichloroethene	<0.245	2.45	1.79	73	1.88	77	59-172	5	25	mg/kg	11.08.2019 23:04	
1,1-Dichloropropene	<0.245	2.45	1.94	79	1.97	80	75-125	2	25	mg/kg	11.08.2019 23:04	
1,2,3-Trichlorobenzene	<0.245	2.45	2.07	84	2.20	90	75-137	6	25	mg/kg	11.08.2019 23:04	
1,2,3-Trichloropropane	<0.245	2.45	2.16	88	2.05	84	75-125	5	25	mg/kg	11.08.2019 23:04	
1,2,4-Trichlorobenzene	<0.245	2.45	1.96	80	2.06	84	75-135	5	25	mg/kg	11.08.2019 23:04	
1,2,4-Trimethylbenzene	<0.245	2.45	1.99	81	2.06	84	75-125	3	25	mg/kg	11.08.2019 23:04	
1,2-Dibromo-3-Chloropropane	<0.245	2.45	2.03	83	1.94	79	59-125	5	25	mg/kg	11.08.2019 23:04	
1,2-Dibromoethane	<0.245	2.45	2.22	91	2.15	88	73-125	3	25	mg/kg	11.08.2019 23:04	
1,2-Dichlorobenzene	<0.245	2.45	2.11	86	2.13	87	75-125	1	25	mg/kg	11.08.2019 23:04	
1,2-Dichloroethane	<0.245	2.45	2.02	82	2.00	82	68-127	1	25	mg/kg	11.08.2019 23:04	
1,2-Dichloropropane	<0.245	2.45	2.11	86	2.08	85	74-125	1	25	mg/kg	11.08.2019 23:04	
1,3,5-Trimethylbenzene	<0.245	2.45	2.14	87	2.20	90	70-130	3	25	mg/kg	11.08.2019 23:04	
1,3-Dichlorobenzene	<0.245	2.45	2.12	87	2.10	86	75-125	1	25	mg/kg	11.08.2019 23:04	
1,3-Dichloropropane	<0.245	2.45	2.39	98	2.29	93	75-125	4	25	mg/kg	11.08.2019 23:04	
1,4-Dichlorobenzene	<0.245	2.45	2.07	84	2.05	84	75-125	1	25	mg/kg	11.08.2019 23:04	
2,2-Dichloropropane	<0.245	2.45	1.85	76	1.89	77	75-125	2	25	mg/kg	11.08.2019 23:04	
2-Butanone	<0.978	12.2	9.06	74	8.45	69	75-125	7	25	mg/kg	11.08.2019 23:04	X
2-Chlorotoluene	<0.245	2.45	2.08	85	2.12	87	73-125	2	25	mg/kg	11.08.2019 23:04	
2-Hexanone	<2.45	12.2	11.0	90	9.65	79	75-125	13	25	mg/kg	11.08.2019 23:04	
4-Chlorotoluene	<0.245	2.45	2.12	87	2.11	86	74-125	0	25	mg/kg	11.08.2019 23:04	
4-Methyl-2-Pentanone	<2.45	12.2	10.8	89	9.98	82	60-140	8	25	mg/kg	11.08.2019 23:04	
Acetone	<4.89	12.2	6.26	51	6.17	51	50-150	1	25	mg/kg	11.08.2019 23:04	
Benzene	<0.0489	2.45	2.00	82	1.99	81	66-142	1	25	mg/kg	11.08.2019 23:04	
Bromobenzene	<0.245	2.45	2.17	89	2.18	89	75-125	0	25	mg/kg	11.08.2019 23:04	
Bromochloromethane	<0.245	2.45	2.01	82	2.04	83	60-140	1	25	mg/kg	11.08.2019 23:04	
Bromodichloromethane	<0.245	2.45	2.03	83	1.96	80	75-125	4	25	mg/kg	11.08.2019 23:04	
Bromoform	<0.245	2.45	2.12	87	1.92	78	75-125	10	25	mg/kg	11.08.2019 23:04	
Bromomethane	<0.245	2.45	0.449	18	0.510	21	60-140	13	25	mg/kg	11.08.2019 23:04	X
Carbon Disulfide	<0.245	2.45	1.56	64	1.65	67	60-140	6	25	mg/kg	11.08.2019 23:04	
Carbon Tetrachloride	<0.245	2.45	1.72	70	1.72	70	62-125	0	25	mg/kg	11.08.2019 23:04	
Chlorobenzene	<0.245	2.45	2.11	86	2.08	85	60-133	1	25	mg/kg	11.08.2019 23:04	
Chloroethane	<0.489	2.45	0.520	21	0.554	23	60-140	6	25	mg/kg	11.08.2019 23:04	X
Chloroform	<0.245	2.45	2.00	82	2.04	83	74-125	2	25	mg/kg	11.08.2019 23:04	
Chloromethane	<0.245	2.45	1.92	78	2.01	82	60-140	5	25	mg/kg	11.08.2019 23:04	
cis-1,2-Dichloroethene	<0.245	2.45	1.96	80	2.01	82	75-125	3	25	mg/kg	11.08.2019 23:04	
cis-1,3-Dichloropropene	<0.245	2.45	2.29	93	2.19	89	74-125	4	25	mg/kg	11.08.2019 23:04	
Dibromochloromethane	<0.245	2.45	2.06	84	1.95	80	73-125	5	25	mg/kg	11.08.2019 23:04	
Dibromomethane	<0.245	2.45	2.07	84	2.06	84	69-127	0	25	mg/kg	11.08.2019 23:04	
Dichlorodifluoromethane	<0.245	2.45	2.35	96	2.47	101	65-135	5	25	mg/kg	11.08.2019 23:04	
Ethylbenzene	<0.0489	2.45	2.07	84	2.04	83	75-125	1	25	mg/kg	11.08.2019 23:04	
Hexachlorobutadiene	<0.245	2.45	2.01	82	2.04	83	75-125	1	25	mg/kg	11.08.2019 23:04	
Iodomethane (Methyl Iodide)	<0.978	2.45	1.52	62	1.59	65	75-125	5	25	mg/kg	11.08.2019 23:04	X
Isopropylbenzene	<0.245	2.45	2.16	88	2.19	89	75-125	1	25	mg/kg	11.08.2019 23:04	
m,p-Xylenes	<0.0978	4.89	4.20	86	4.17	85	75-125	1	25	mg/kg	11.08.2019 23:04	
Methylene Chloride	<0.978	2.45	2.10	86	2.17	89	75-125	3	25	mg/kg	11.08.2019 23:04	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107033 Matrix: Soil Date Prep: 11.08.2019

Parent Sample Id: 642585-004 MS Sample Id: 642585-004 S MSD Sample Id: 642585-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.245	2.45	2.08	85	2.08	85	60-140	0	25	mg/kg	11.08.2019 23:04	
Naphthalene	<0.489	2.45	2.34	96	2.41	98	70-130	3	25	mg/kg	11.08.2019 23:04	
n-Butylbenzene	<0.245	2.45	1.95	80	1.97	80	75-125	1	25	mg/kg	11.08.2019 23:04	
n-Propylbenzene	<0.245	2.45	2.06	84	2.09	85	75-125	1	25	mg/kg	11.08.2019 23:04	
o-Xylene	<0.0489	2.45	2.19	89	2.19	89	75-125	0	25	mg/kg	11.08.2019 23:04	
p-Cymene (p-Isopropyltoluene)	<0.245	2.45	1.91	78	1.98	81	75-125	4	25	mg/kg	11.08.2019 23:04	
Sec-Butylbenzene	<0.245	2.45	1.99	81	2.07	84	75-125	4	25	mg/kg	11.08.2019 23:04	
Styrene	<0.245	2.45	2.24	91	2.18	89	75-125	3	25	mg/kg	11.08.2019 23:04	
tert-Butylbenzene	<0.245	2.45	2.26	92	2.37	97	75-125	5	25	mg/kg	11.08.2019 23:04	
Tetrachloroethylene	<0.245	2.45	1.96	80	1.98	81	71-125	1	25	mg/kg	11.08.2019 23:04	
Toluene	<0.245	2.45	2.03	83	2.05	84	59-139	1	25	mg/kg	11.08.2019 23:04	
trans-1,2-dichloroethene	<0.245	2.45	1.84	75	1.93	79	75-125	5	25	mg/kg	11.08.2019 23:04	
trans-1,3-dichloropropene	<0.245	2.45	2.29	93	2.22	91	66-125	3	25	mg/kg	11.08.2019 23:04	
Trichloroethene	<0.245	2.45	1.80	73	1.78	73	62-137	1	25	mg/kg	11.08.2019 23:04	
Trichlorofluoromethane	<0.245	2.45	1.43	58	1.51	62	67-125	5	25	mg/kg	11.08.2019 23:04	X
Vinyl Acetate	<0.489	12.2	8.86	73	8.67	71	60-140	2	25	mg/kg	11.08.2019 23:04	
Vinyl Chloride	<0.245	2.45	1.74	71	1.84	75	60-140	6	25	mg/kg	11.08.2019 23:04	
1,3-Butadiene	<0.245	2.45	1.81	74	1.82	74	70-130	1	25	mg/kg	11.08.2019 23:04	
Cyclohexane	<0.245	2.45	1.58	64	1.63	67	70-130	3	25	mg/kg	11.08.2019 23:04	X
Dicyclopentadiene	<0.245	2.45	1.73	71	1.85	76	70-120	7	25	mg/kg	11.08.2019 23:04	
Methylcyclohexane	<0.489	2.45	1.71	70	1.74	71	65-135	2	25	mg/kg	11.08.2019 23:04	
n-Hexane	<0.489	2.45	1.60	65	1.58	64	72-125	1	25	mg/kg	11.08.2019 23:04	X
4-Ethyltoluene	<0.245	2.45	2.02	82	2.01	82	70-130	0	25	mg/kg	11.08.2019 23:04	
Propene	<0.245	2.45	1.34	55	1.41	58	70-130	5	25	mg/kg	11.08.2019 23:04	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	92		94		53-142	%	11.08.2019 23:04
1,2-Dichloroethane-D4	97		94		56-150	%	11.08.2019 23:04
Toluene-D8	100		102		70-130	%	11.08.2019 23:04
4-Bromofluorobenzene	99		100		68-152	%	11.08.2019 23:04

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642585

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107061 Matrix: Soil Date Prep: 11.11.2019

Parent Sample Id: 642676-001 MS Sample Id: 642676-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Acetone	0.125	0.227	0.159	15	50-150	mg/kg	11.11.2019 11:37	X
Iodomethane (Methyl Iodide)	<0.0182	0.0454	0.0338	74	75-125	mg/kg	11.11.2019 11:37	X
m,p-Xylenes	<0.000396	0.0908	0.0693	76	75-125	mg/kg	11.11.2019 11:37	
o-Xylene	<0.000908	0.0454	0.0367	81	75-125	mg/kg	11.11.2019 11:37	
n-Hexane	<0.00908	0.0454	0.0268	59	72-125	mg/kg	11.11.2019 11:37	X
Propene	0.00296	0.0454	0.0376	76	70-130	mg/kg	11.11.2019 11:37	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
Dibromofluoromethane	102		53-142	%	11.11.2019 11:37
1,2-Dichloroethane-D4	101		56-150	%	11.11.2019 11:37
Toluene-D8	103		70-130	%	11.11.2019 11:37
4-Bromofluorobenzene	104		68-152	%	11.11.2019 11:37

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

Work Order No: 642585

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ
Project Number:	D3118600.A.CS.EV.DG.05-1B
P.O. Number:	700735632
Sampler's Name:	

Turn Around: Routine [X] Rush: 48 HR Due Date:

SAMPLE RECEIPT				
Temp Blank:	Yes / No	Wet Ice:	Yes / No	
Temperature (°C):		Thermometer ID		
Received Intact:	Yes / No	IR ID:HOU-068	C/F:+0.2	
Cooler Custody Seals:	Yes / No / N/A	Temp: 0.8	Corrected: 1.0	
Sample Custody Seals:	Yes / No / N/A			

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide	Sample Comments
D-B31-10.0-10.5	S	11-6-19	1300	10.0-10.5	2	X	X							
D-B31-15.0-15.5	S		1310	15.0-15.5	2	X	X							
D-B31-20.0-20.5	S		1320	20.0-20.5	2	X	X							MS/MSD
D-B29-5.0-5.5	S	11-7-19	0800	5.0-5.5	10	X	X	X	X	X	X	X	X	MS/MSD
D-B29-10.0-10.5	S		0830	10.0-10.5	2	X	X							
D-B29-15.0-15.5	S		0855	15.0-15.5	2	X	X							
D-B29-20.0-20.5	S		0910	20.0-20.5	2	X	X							
D-TB01-110719	S	11-7-19	0800	—	1			X						

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	FedEx	11-7-19; 1300	2 FedEx		11-8-19 1100
3			4		
5			6		

FedEx.
TRK#
0200 8125 9253 6277
FRI - 08 NOV 10:30A
PRIORITY OVERNIGHT
XH SGRA
77477
TX-US
IAH
FID 3604368 07NOV19 AVWA 56AC1/F330/05A2

800-255-395
Quality Envir
QEC

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 11.08.2019 11.00.00 AM

Work Order #: 642585

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: MDS

PH Device/Lot#:

Checklist completed by: Monica Shakhshir Date: 11.08.2019

Checklist reviewed by: Ruriko Konuma Date: 11.08.2019

Analytical Report 642698

for

APS

Project Manager: Judy Heywood

APS MGP Douglas, AZ

11.13.2019

Collected By: Client

2525 West Huntington Drive, Suite 102
Tempe, AZ 85282
Ph: (480) 355-0900

Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Houston (EPA Lab code: TX00122): Arizona (AZ0765)
Xenco-Dallas (EPA Lab code: TX01468): Arizona (AZ0809)

11.13.2019

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: TWA Report No(s): **642698**
APS MGP Douglas, AZ
Project Address:

Judy Heywood:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the TWA Report Number(s) 642698. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the ADHS certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with ADHS standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and ADHS Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by TransWest Analytical. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 642698 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting TransWest Analytical to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ruriko Konuma
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

CASE NARRATIVE

Client Name: APS

Project Name: APS MGP Douglas, AZ

Project ID:
Work Order Number(s): *642698*

Report Date: *11.13.2019*
Date Received: *11.08.2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107053 VOCs by SW-846 8260C

Lab Sample ID 642698-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Acetone recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642698-001, -002, -003, -004, -005.

The Laboratory Control Sample for Acetone is within laboratory Control Limits, therefore the data was accepted.

Flagging Criteria

Arizona Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

M2 Matrix spike recovery was low; the associated blank spike recovery was acceptable.

Sample Cross Reference 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-MW27	W	11.07.2019 13:10		642698-001
D-FD01-110719	W	11.07.2019 13:30		642698-002
D-MW26	W	11.07.2019 14:20		642698-003
D-MW25	W	11.07.2019 15:25		642698-004
D-TB03-110819	W	11.08.2019 12:00		642698-005

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW27** Matrix: Water Date Received:11.08.2019 14:40

Lab Sample Id: 642698-001 Date Collected: 11.07.2019 13:10

Analytical Method: Recoverable Metals,Total, by EPA 200.8 Prep Method: E200.8P

Tech: MLI % Solids:

Analyst: DEP Date Prep: 11.11.2019 10:20

Seq Number: 3107096 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Antimony	7440-36-0	<0.00200	0.00200	mg/L	11.11.2019 18:04	U	1
Arsenic	7440-38-2	**0.00496**	0.00400	mg/L	11.11.2019 18:04		1
Barium	7440-39-3	**0.0510**	0.00400	mg/L	11.11.2019 18:04		1
Beryllium	7440-41-7	<0.00200	0.00200	mg/L	11.11.2019 18:04	U	1
Cadmium	7440-43-9	<0.00200	0.00200	mg/L	11.11.2019 18:04	U	1
Chromium	7440-47-3	<0.00400	0.00400	mg/L	11.11.2019 18:04	U	1
Cobalt	7440-48-4	<0.00200	0.00200	mg/L	11.11.2019 18:04	U	1
Copper	7440-50-8	**0.00409**	0.00400	mg/L	11.11.2019 18:04		1
Lead	7439-92-1	<0.00200	0.00200	mg/L	11.11.2019 18:04	U	1
Manganese	7439-96-5	**0.361**	0.00200	mg/L	11.11.2019 18:04		1
Molybdenum	7439-98-7	**0.00293**	0.00200	mg/L	11.11.2019 18:04		1
Nickel	7440-02-0	**0.00317**	0.00200	mg/L	11.11.2019 18:04		1
Selenium	7782-49-2	**0.0112**	0.00200	mg/L	11.11.2019 18:04		1
Silver	7440-22-4	<0.00200	0.00200	mg/L	11.11.2019 18:04	U	1
Thallium	7440-28-0	<0.00200	0.00200	mg/L	11.11.2019 18:04	U	1

Analytical Method: Mercury, Total by EPA 245.1 Prep Method: E245.1P

Tech: ADS % Solids:

Analyst: ANJ Date Prep: 11.12.2019 08:35

Seq Number: 3107186 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	<0.000200	0.000200	mg/L	11.12.2019 14:08		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW27**
Lab Sample Id: 642698-001

Matrix: Water
Date Collected: 11.07.2019 13:10

Date Received:11.08.2019 14:40

Analytical Method: PAHs by SW846 8270D SIM
Tech: AHI
Analyst: DNE
Seq Number: 3107128

Date Prep: 11.10.2019 16:29

Prep Method: SW3511
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
2-Methylnaphthalene	91-57-6	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Acenaphthene	83-32-9	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Acenaphthylene	208-96-8	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Anthracene	120-12-7	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Benzo(a)anthracene	56-55-3	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Benzo(a)pyrene	50-32-8	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Benzo(b)fluoranthene	205-99-2	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Benzo(g,h,i)perylene	191-24-2	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Benzo(k)fluoranthene	207-08-9	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Chrysene	218-01-9	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Dibenz(a,h)anthracene	53-70-3	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Fluoranthene	206-44-0	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Fluorene	86-73-7	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Naphthalene	91-20-3	<0.000391	0.000391	mg/L	11.11.2019 12:38		39.1
Phenanthrene	85-01-8	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1
Pyrene	129-00-0	<0.000196	0.000196	mg/L	11.11.2019 12:38		39.1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
2-Fluorobiphenyl	122	%	54-146	11.11.2019 12:38	
Nitrobenzene-d5	101	%	46-151	11.11.2019 12:38	
Terphenyl-D14	105	%	51-139	11.11.2019 12:38	

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW27**
Lab Sample Id: 642698-001

Matrix: Water
Date Collected: 11.07.2019 13:10

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Date Prep: 11.11.2019 11:10

Prep Method: SW5030B
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acetone	67-64-1	<0.100	0.100	mg/L	11.11.2019 14:00	M2	1
Benzene	71-43-2	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Bromobenzene	108-86-1	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Bromochloromethane	74-97-5	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Bromodichloromethane	75-27-4	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Bromoform	75-25-2	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Methyl bromide	74-83-9	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Methyl ethyl ketone	78-93-3	<0.0500	0.0500	mg/L	11.11.2019 14:00		1
n-Butylbenzene	104-51-8	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Sec-Butylbenzene	135-98-8	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
tert-Butylbenzene	98-06-6	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Carbon Disulfide	75-15-0	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Carbon Tetrachloride	56-23-5	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Chlorobenzene	108-90-7	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Chloroethane	75-00-3	<0.0100	0.0100	mg/L	11.11.2019 14:00		1
Chloroform	67-66-3	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1-Chlorohexane	544-10-5	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Methyl Chloride	74-87-3	<0.0100	0.0100	mg/L	11.11.2019 14:00		1
2-Chlorotoluene	95-49-8	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
4-Chlorotoluene	106-43-4	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Cyclohexane	110-82-7	<0.00500	0.00500	mg/L	11.11.2019 14:00	*	1
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Dibromochloromethane	124-48-1	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
1,2-Dibromo-3-Chloropropane	96-12-8	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,2-Dibromoethane	106-93-4	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Methylene Bromide	74-95-3	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,2-Dichlorobenzene	95-50-1	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,3-Dichlorobenzene	541-73-1	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,4-Dichlorobenzene	106-46-7	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Dichlorodifluoromethane	75-71-8	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,1-Dichloroethane	75-34-3	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,2-Dichloroethane	107-06-2	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,1-Dichloroethene	75-35-4	**0.00401**	0.00100	mg/L	11.11.2019 14:00		1
cis-1,2-Dichloroethylene	156-59-2	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
trans-1,2-dichloroethylene	156-60-5	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,2-Dichloropropane	78-87-5	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
1,3-Dichloropropane	142-28-9	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
2,2-Dichloropropane	594-20-7	<0.00500	0.00500	mg/L	11.11.2019 14:00		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW27**
Lab Sample Id: 642698-001

Matrix: Water
Date Collected: 11.07.2019 13:10

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Date Prep: 11.11.2019 11:10

Prep Method: SW5030B
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1-Dichloropropene	563-58-6	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
cis-1,3-Dichloropropene	10061-01-5	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
trans-1,3-dichloropropene	10061-02-6	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Hexachlorobutadiene	87-68-3	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
2-Hexanone	591-78-6	<0.0500	0.0500	mg/L	11.11.2019 14:00		1
Isopropylbenzene	98-82-8	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Methylcyclohexane	108-87-2	<0.0100	0.0100	mg/L	11.11.2019 14:00		1
Methylene Chloride	75-09-2	<0.0100	0.0100	mg/L	11.11.2019 14:00		1
Methyl iodide	74-88-4	<0.0200	0.0200	mg/L	11.11.2019 14:00		1
4-Methyl-2-Pentanone	108-10-1	<0.0500	0.0500	mg/L	11.11.2019 14:00		1
MTBE	1634-04-4	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Naphthalene	91-20-3	<0.0100	0.0100	mg/L	11.11.2019 14:00		1
n-Propylbenzene	103-65-1	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Styrene	100-42-5	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,1,1,2-Tetrachloroethane	630-20-6	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,1,2,2-Tetrachloroethane	79-34-5	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Tetrachloroethene	127-18-4	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Toluene	108-88-3	**0.00770**	0.00100	mg/L	11.11.2019 14:00		1
1,2,3-Trichlorobenzene	87-61-6	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
1,2,4-Trichlorobenzene	120-82-1	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
1,1,1-Trichloroethane	71-55-6	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
1,1,2-Trichloroethane	79-00-5	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Trichloroethylene	79-01-6	**0.0688**	0.00500	mg/L	11.11.2019 14:00		1
Trichlorofluoromethane	75-69-4	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,2,3-Trichloropropane	96-18-4	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,2,4-Trimethylbenzene	95-63-6	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
1,3,5-Trimethylbenzene	108-67-8	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
m,p-Xylenes	179601-23-1	<0.0100	0.0100	mg/L	11.11.2019 14:00		1
Vinyl Acetate	108-05-4	<0.0500	0.0500	mg/L	11.11.2019 14:00		1
Vinyl Chloride	75-01-4	<0.00200	0.00200	mg/L	11.11.2019 14:00		1
1,3-Butadiene	106-99-0	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Dicyclopentadiene	77-73-6	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
n-Hexane	110-54-3	<0.00500	0.00500	mg/L	11.11.2019 14:00		1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	11.11.2019 14:00		1
Total Trihalomethanes		<0.00100	0.00100	mg/L	11.11.2019 14:00		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW27**
Lab Sample Id: 642698-001

Matrix: Water
Date Collected: 11.07.2019 13:10

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Prep Method: SW5030B
% Solids:

Date Prep: 11.11.2019 11:10

SUB: AZ0765

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	99	%	75-131	11.11.2019 14:00	
1,2-Dichloroethane-D4	101	%	63-144	11.11.2019 14:00	
Toluene-D8	99	%	80-117	11.11.2019 14:00	
4-Bromofluorobenzene	104	%	74-124	11.11.2019 14:00	

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110719** Matrix: Water Date Received:11.08.2019 14:40

Lab Sample Id: 642698-002 Date Collected: 11.07.2019 13:30

Analytical Method: Recoverable Metals,Total, by EPA 200.8 Prep Method: E200.8P

Tech: MLI % Solids:

Analyst: DEP Date Prep: 11.11.2019 10:20

Seq Number: 3107096 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Antimony	7440-36-0	<0.00200	0.00200	mg/L	11.11.2019 18:07	U	1
Arsenic	7440-38-2	**0.00574**	0.00400	mg/L	11.11.2019 18:07		1
Barium	7440-39-3	**0.0557**	0.00400	mg/L	11.11.2019 18:07		1
Beryllium	7440-41-7	<0.00200	0.00200	mg/L	11.11.2019 18:07	U	1
Cadmium	7440-43-9	<0.00200	0.00200	mg/L	11.11.2019 18:07	U	1
Chromium	7440-47-3	<0.00400	0.00400	mg/L	11.11.2019 18:07	U	1
Cobalt	7440-48-4	<0.00200	0.00200	mg/L	11.11.2019 18:07	U	1
Copper	7440-50-8	**0.00488**	0.00400	mg/L	11.11.2019 18:07		1
Lead	7439-92-1	<0.00200	0.00200	mg/L	11.11.2019 18:07	U	1
Manganese	7439-96-5	**0.367**	0.00200	mg/L	11.11.2019 18:07		1
Molybdenum	7439-98-7	**0.00311**	0.00200	mg/L	11.11.2019 18:07		1
Nickel	7440-02-0	**0.00367**	0.00200	mg/L	11.11.2019 18:07		1
Selenium	7782-49-2	**0.0115**	0.00200	mg/L	11.11.2019 18:07		1
Silver	7440-22-4	<0.00200	0.00200	mg/L	11.11.2019 18:07	U	1
Thallium	7440-28-0	<0.00200	0.00200	mg/L	11.11.2019 18:07	U	1

Analytical Method: Mercury, Total by EPA 245.1 Prep Method: E245.1P

Tech: ADS % Solids:

Analyst: ANJ Date Prep: 11.12.2019 08:35

Seq Number: 3107186 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	<0.000200	0.000200	mg/L	11.12.2019 14:10		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110719**
Matrix: Water
Date Received:11.08.2019 14:40
Lab Sample Id: 642698-002
Date Collected: 11.07.2019 13:30

Analytical Method: PAHs by SW846 8270D SIM
Prep Method: SW3511
Tech: AHI
% Solids:
Analyst: DNE
Date Prep: 11.10.2019 16:38
Seq Number: 3107128
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
2-Methylnaphthalene	91-57-6	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Acenaphthene	83-32-9	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Acenaphthylene	208-96-8	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Anthracene	120-12-7	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Benzo(a)anthracene	56-55-3	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Benzo(a)pyrene	50-32-8	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Benzo(b)fluoranthene	205-99-2	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Benzo(g,h,i)perylene	191-24-2	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Benzo(k)fluoranthene	207-08-9	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Chrysene	218-01-9	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Dibenz(a,h)anthracene	53-70-3	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Fluoranthene	206-44-0	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Fluorene	86-73-7	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Naphthalene	91-20-3	<0.000388	0.000388	mg/L	11.11.2019 19:43		38.75
Phenanthrene	85-01-8	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75
Pyrene	129-00-0	<0.000194	0.000194	mg/L	11.11.2019 19:43		38.75

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
2-Fluorobiphenyl	110	%	54-146	11.11.2019 19:43	
Nitrobenzene-d5	144	%	46-151	11.11.2019 19:43	
Terphenyl-D14	104	%	51-139	11.11.2019 19:43	

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110719**
Matrix: Water
Date Received:11.08.2019 14:40
Lab Sample Id: 642698-002
Date Collected: 11.07.2019 13:30

Analytical Method: VOCs by SW-846 8260C
Prep Method: SW5030B
Tech: EZA
% Solids:
Analyst: EZA
Date Prep: 11.11.2019 14:33
Seq Number: 3107053
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acetone	67-64-1	<0.100	0.100	mg/L	11.11.2019 15:57		1
Benzene	71-43-2	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Bromobenzene	108-86-1	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Bromochloromethane	74-97-5	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Bromodichloromethane	75-27-4	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Bromoform	75-25-2	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Methyl bromide	74-83-9	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Methyl ethyl ketone	78-93-3	<0.0500	0.0500	mg/L	11.11.2019 15:57		1
n-Butylbenzene	104-51-8	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Sec-Butylbenzene	135-98-8	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
tert-Butylbenzene	98-06-6	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Carbon Disulfide	75-15-0	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Carbon Tetrachloride	56-23-5	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Chlorobenzene	108-90-7	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Chloroethane	75-00-3	<0.0100	0.0100	mg/L	11.11.2019 15:57		1
Chloroform	67-66-3	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1-Chlorohexane	544-10-5	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Methyl Chloride	74-87-3	<0.0100	0.0100	mg/L	11.11.2019 15:57		1
2-Chlorotoluene	95-49-8	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
4-Chlorotoluene	106-43-4	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Cyclohexane	110-82-7	<0.00500	0.00500	mg/L	11.11.2019 15:57	*	1
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Dibromochloromethane	124-48-1	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
1,2-Dibromo-3-Chloropropane	96-12-8	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,2-Dibromoethane	106-93-4	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Methylene Bromide	74-95-3	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,2-Dichlorobenzene	95-50-1	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,3-Dichlorobenzene	541-73-1	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,4-Dichlorobenzene	106-46-7	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Dichlorodifluoromethane	75-71-8	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,1-Dichloroethane	75-34-3	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,2-Dichloroethane	107-06-2	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,1-Dichloroethene	75-35-4	**0.00437**	0.00100	mg/L	11.11.2019 15:57		1
cis-1,2-Dichloroethylene	156-59-2	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
trans-1,2-dichloroethylene	156-60-5	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,2-Dichloropropane	78-87-5	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
1,3-Dichloropropane	142-28-9	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
2,2-Dichloropropane	594-20-7	<0.00500	0.00500	mg/L	11.11.2019 15:57		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110719**
Matrix: Water
Date Received:11.08.2019 14:40
Lab Sample Id: 642698-002
Date Collected: 11.07.2019 13:30

Analytical Method: VOCs by SW-846 8260C
Prep Method: SW5030B
Tech: EZA
% Solids:
Analyst: EZA
Date Prep: 11.11.2019 14:33
Seq Number: 3107053
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1-Dichloropropene	563-58-6	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
cis-1,3-Dichloropropene	10061-01-5	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
trans-1,3-dichloropropene	10061-02-6	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Hexachlorobutadiene	87-68-3	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
2-Hexanone	591-78-6	<0.0500	0.0500	mg/L	11.11.2019 15:57		1
Isopropylbenzene	98-82-8	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Methylcyclohexane	108-87-2	<0.0100	0.0100	mg/L	11.11.2019 15:57		1
Methylene Chloride	75-09-2	<0.0100	0.0100	mg/L	11.11.2019 15:57		1
Methyl iodide	74-88-4	<0.0200	0.0200	mg/L	11.11.2019 15:57		1
4-Methyl-2-Pentanone	108-10-1	<0.0500	0.0500	mg/L	11.11.2019 15:57		1
MTBE	1634-04-4	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Naphthalene	91-20-3	<0.0100	0.0100	mg/L	11.11.2019 15:57		1
n-Propylbenzene	103-65-1	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Styrene	100-42-5	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,1,1,2-Tetrachloroethane	630-20-6	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,1,2,2-Tetrachloroethane	79-34-5	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Tetrachloroethene	127-18-4	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Toluene	108-88-3	**0.00792**	0.00100	mg/L	11.11.2019 15:57		1
1,2,3-Trichlorobenzene	87-61-6	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
1,2,4-Trichlorobenzene	120-82-1	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
1,1,1-Trichloroethane	71-55-6	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
1,1,2-Trichloroethane	79-00-5	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Trichloroethylene	79-01-6	**0.0712**	0.00500	mg/L	11.11.2019 15:57		1
Trichlorofluoromethane	75-69-4	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,2,3-Trichloropropane	96-18-4	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,2,4-Trimethylbenzene	95-63-6	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
1,3,5-Trimethylbenzene	108-67-8	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
m,p-Xylenes	179601-23-1	<0.0100	0.0100	mg/L	11.11.2019 15:57		1
Vinyl Acetate	108-05-4	<0.0500	0.0500	mg/L	11.11.2019 15:57		1
Vinyl Chloride	75-01-4	<0.00200	0.00200	mg/L	11.11.2019 15:57		1
1,3-Butadiene	106-99-0	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Dicyclopentadiene	77-73-6	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
n-Hexane	110-54-3	<0.00500	0.00500	mg/L	11.11.2019 15:57		1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	11.11.2019 15:57		1
Total Trihalomethanes		<0.00100	0.00100	mg/L	11.11.2019 15:57		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-FD01-110719**
Lab Sample Id: 642698-002

Matrix: Water
Date Collected: 11.07.2019 13:30

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Prep Method: SW5030B
% Solids:

Date Prep: 11.11.2019 14:33

SUB: AZ0765

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	99	%	75-131	11.11.2019 15:57	
1,2-Dichloroethane-D4	103	%	63-144	11.11.2019 15:57	
Toluene-D8	100	%	80-117	11.11.2019 15:57	
4-Bromofluorobenzene	101	%	74-124	11.11.2019 15:57	

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW26** Matrix: Water Date Received:11.08.2019 14:40

Lab Sample Id: 642698-003 Date Collected: 11.07.2019 14:20

Analytical Method: Recoverable Metals,Total, by EPA 200.8 Prep Method: E200.8P

Tech: MLI % Solids:

Analyst: DEP Date Prep: 11.11.2019 10:20

Seq Number: 3107096 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Antimony	7440-36-0	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1
Arsenic	7440-38-2	**0.00680**	0.00400	mg/L	11.11.2019 18:10		1
Barium	7440-39-3	**0.0431**	0.00400	mg/L	11.11.2019 18:10		1
Beryllium	7440-41-7	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1
Cadmium	7440-43-9	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1
Chromium	7440-47-3	<0.00400	0.00400	mg/L	11.11.2019 18:10	U	1
Cobalt	7440-48-4	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1
Copper	7440-50-8	<0.00400	0.00400	mg/L	11.11.2019 18:10	U	1
Lead	7439-92-1	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1
Manganese	7439-96-5	**0.0569**	0.00200	mg/L	11.11.2019 18:10		1
Molybdenum	7439-98-7	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1
Nickel	7440-02-0	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1
Selenium	7782-49-2	**0.00867**	0.00200	mg/L	11.11.2019 18:10		1
Silver	7440-22-4	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1
Thallium	7440-28-0	<0.00200	0.00200	mg/L	11.11.2019 18:10	U	1

Analytical Method: Mercury, Total by EPA 245.1 Prep Method: E245.1P

Tech: ADS % Solids:

Analyst: ANJ Date Prep: 11.12.2019 08:35

Seq Number: 3107186 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	<0.000200	0.000200	mg/L	11.12.2019 14:12		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW26**
Lab Sample Id: 642698-003

Matrix: Water
Date Collected: 11.07.2019 14:20

Date Received:11.08.2019 14:40

Analytical Method: PAHs by SW846 8270D SIM
Tech: AHI
Analyst: DNE
Seq Number: 3107128

Date Prep: 11.10.2019 16:41

Prep Method: SW3511
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
2-Methylnaphthalene	91-57-6	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Acenaphthene	83-32-9	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Acenaphthylene	208-96-8	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Anthracene	120-12-7	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Benzo(a)anthracene	56-55-3	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Benzo(a)pyrene	50-32-8	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Benzo(b)fluoranthene	205-99-2	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Benzo(g,h,i)perylene	191-24-2	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Benzo(k)fluoranthene	207-08-9	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Chrysene	218-01-9	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Dibenz(a,h)anthracene	53-70-3	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Fluoranthene	206-44-0	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Fluorene	86-73-7	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Naphthalene	91-20-3	<0.000373	0.000373	mg/L	11.11.2019 20:49		37.34
Phenanthrene	85-01-8	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34
Pyrene	129-00-0	<0.000187	0.000187	mg/L	11.11.2019 20:49		37.34

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
2-Fluorobiphenyl	106	%	54-146	11.11.2019 20:49	
Nitrobenzene-d5	142	%	46-151	11.11.2019 20:49	
Terphenyl-D14	86	%	51-139	11.11.2019 20:49	

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW26**
Lab Sample Id: 642698-003

Matrix: Water
Date Collected: 11.07.2019 14:20

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Date Prep: 11.11.2019 14:33

Prep Method: SW5030B
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acetone	67-64-1	<0.100	0.100	mg/L	11.11.2019 16:20		1
Benzene	71-43-2	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Bromobenzene	108-86-1	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Bromochloromethane	74-97-5	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Bromodichloromethane	75-27-4	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Bromoform	75-25-2	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Methyl bromide	74-83-9	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Methyl ethyl ketone	78-93-3	<0.0500	0.0500	mg/L	11.11.2019 16:20		1
n-Butylbenzene	104-51-8	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Sec-Butylbenzene	135-98-8	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
tert-Butylbenzene	98-06-6	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Carbon Disulfide	75-15-0	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Carbon Tetrachloride	56-23-5	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Chlorobenzene	108-90-7	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Chloroethane	75-00-3	<0.0100	0.0100	mg/L	11.11.2019 16:20		1
Chloroform	67-66-3	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1-Chlorohexane	544-10-5	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Methyl Chloride	74-87-3	<0.0100	0.0100	mg/L	11.11.2019 16:20		1
2-Chlorotoluene	95-49-8	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
4-Chlorotoluene	106-43-4	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Cyclohexane	110-82-7	<0.00500	0.00500	mg/L	11.11.2019 16:20	*	1
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Dibromochloromethane	124-48-1	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
1,2-Dibromo-3-Chloropropane	96-12-8	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,2-Dibromoethane	106-93-4	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Methylene Bromide	74-95-3	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,2-Dichlorobenzene	95-50-1	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,3-Dichlorobenzene	541-73-1	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,4-Dichlorobenzene	106-46-7	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Dichlorodifluoromethane	75-71-8	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,1-Dichloroethane	75-34-3	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,2-Dichloroethane	107-06-2	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,1-Dichloroethene	75-35-4	**0.00402**	0.00100	mg/L	11.11.2019 16:20		1
cis-1,2-Dichloroethylene	156-59-2	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
trans-1,2-dichloroethylene	156-60-5	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,2-Dichloropropane	78-87-5	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
1,3-Dichloropropane	142-28-9	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
2,2-Dichloropropane	594-20-7	<0.00500	0.00500	mg/L	11.11.2019 16:20		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW26**
Lab Sample Id: 642698-003

Matrix: Water
Date Collected: 11.07.2019 14:20

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Date Prep: 11.11.2019 14:33

Prep Method: SW5030B
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1-Dichloropropene	563-58-6	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
cis-1,3-Dichloropropene	10061-01-5	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
trans-1,3-dichloropropene	10061-02-6	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Hexachlorobutadiene	87-68-3	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
2-Hexanone	591-78-6	<0.0500	0.0500	mg/L	11.11.2019 16:20		1
Isopropylbenzene	98-82-8	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Methylcyclohexane	108-87-2	<0.0100	0.0100	mg/L	11.11.2019 16:20		1
Methylene Chloride	75-09-2	<0.0100	0.0100	mg/L	11.11.2019 16:20		1
Methyl iodide	74-88-4	<0.0200	0.0200	mg/L	11.11.2019 16:20		1
4-Methyl-2-Pentanone	108-10-1	<0.0500	0.0500	mg/L	11.11.2019 16:20		1
MTBE	1634-04-4	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Naphthalene	91-20-3	<0.0100	0.0100	mg/L	11.11.2019 16:20		1
n-Propylbenzene	103-65-1	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Styrene	100-42-5	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,1,1,2-Tetrachloroethane	630-20-6	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,1,2,2-Tetrachloroethane	79-34-5	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Tetrachloroethene	127-18-4	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Toluene	108-88-3	**0.00224**	0.00100	mg/L	11.11.2019 16:20		1
1,2,3-Trichlorobenzene	87-61-6	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
1,2,4-Trichlorobenzene	120-82-1	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
1,1,1-Trichloroethane	71-55-6	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
1,1,2-Trichloroethane	79-00-5	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Trichloroethylene	79-01-6	**0.0780**	0.00500	mg/L	11.11.2019 16:20		1
Trichlorofluoromethane	75-69-4	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,2,3-Trichloropropane	96-18-4	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,2,4-Trimethylbenzene	95-63-6	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
1,3,5-Trimethylbenzene	108-67-8	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
m,p-Xylenes	179601-23-1	<0.0100	0.0100	mg/L	11.11.2019 16:20		1
Vinyl Acetate	108-05-4	<0.0500	0.0500	mg/L	11.11.2019 16:20		1
Vinyl Chloride	75-01-4	<0.00200	0.00200	mg/L	11.11.2019 16:20		1
1,3-Butadiene	106-99-0	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Dicyclopentadiene	77-73-6	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
n-Hexane	110-54-3	<0.00500	0.00500	mg/L	11.11.2019 16:20		1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	11.11.2019 16:20		1
Total Trihalomethanes		<0.00100	0.00100	mg/L	11.11.2019 16:20		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW26**
Lab Sample Id: 642698-003

Matrix: Water
Date Collected: 11.07.2019 14:20

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Prep Method: SW5030B
% Solids:

Date Prep: 11.11.2019 14:33

SUB: AZ0765

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	98	%	75-131	11.11.2019 16:20	
1,2-Dichloroethane-D4	101	%	63-144	11.11.2019 16:20	
Toluene-D8	99	%	80-117	11.11.2019 16:20	
4-Bromofluorobenzene	102	%	74-124	11.11.2019 16:20	

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW25** Matrix: Water Date Received:11.08.2019 14:40

Lab Sample Id: 642698-004 Date Collected: 11.07.2019 15:25

Analytical Method: Recoverable Metals,Total, by EPA 200.8 Prep Method: E200.8P

Tech: MLI % Solids:

Analyst: DEP Date Prep: 11.11.2019 10:20

Seq Number: 3107096 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Antimony	7440-36-0	<0.00200	0.00200	mg/L	11.11.2019 18:12	U	1
Arsenic	7440-38-2	**0.00466**	0.00400	mg/L	11.11.2019 18:12		1
Barium	7440-39-3	**0.0435**	0.00400	mg/L	11.11.2019 18:12		1
Beryllium	7440-41-7	<0.00200	0.00200	mg/L	11.11.2019 18:12	U	1
Cadmium	7440-43-9	<0.00200	0.00200	mg/L	11.11.2019 18:12	U	1
Chromium	7440-47-3	<0.00400	0.00400	mg/L	11.11.2019 18:12	U	1
Cobalt	7440-48-4	<0.00200	0.00200	mg/L	11.11.2019 18:12	U	1
Copper	7440-50-8	<0.00400	0.00400	mg/L	11.11.2019 18:12	U	1
Lead	7439-92-1	<0.00200	0.00200	mg/L	11.11.2019 18:12	U	1
Manganese	7439-96-5	**0.0536**	0.00200	mg/L	11.11.2019 18:12		1
Molybdenum	7439-98-7	**0.00275**	0.00200	mg/L	11.11.2019 18:12		1
Nickel	7440-02-0	<0.00200	0.00200	mg/L	11.11.2019 18:12	U	1
Selenium	7782-49-2	**0.00498**	0.00200	mg/L	11.11.2019 18:12		1
Silver	7440-22-4	<0.00200	0.00200	mg/L	11.11.2019 18:12	U	1
Thallium	7440-28-0	<0.00200	0.00200	mg/L	11.11.2019 18:12	U	1

Analytical Method: Mercury, Total by EPA 245.1 Prep Method: E245.1P

Tech: ADS % Solids:

Analyst: ANJ Date Prep: 11.12.2019 08:35

Seq Number: 3107186 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	<0.000200	0.000200	mg/L	11.12.2019 14:14		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW25**
Matrix: Water
Date Received:11.08.2019 14:40
Lab Sample Id: 642698-004
Date Collected: 11.07.2019 15:25

Analytical Method: PAHs by SW846 8270D SIM
Prep Method: SW3511
Tech: AHI
% Solids:
Analyst: DNE
Date Prep: 11.10.2019 16:44
Seq Number: 3107128
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
2-Methylnaphthalene	91-57-6	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Acenaphthene	83-32-9	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Acenaphthylene	208-96-8	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Anthracene	120-12-7	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Benzo(a)anthracene	56-55-3	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Benzo(a)pyrene	50-32-8	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Benzo(b)fluoranthene	205-99-2	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Benzo(g,h,i)perylene	191-24-2	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Benzo(k)fluoranthene	207-08-9	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Chrysene	218-01-9	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Dibenz(a,h)anthracene	53-70-3	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Fluoranthene	206-44-0	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Fluorene	86-73-7	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Naphthalene	91-20-3	<0.000388	0.000388	mg/L	11.11.2019 21:06		38.84
Phenanthrene	85-01-8	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84
Pyrene	129-00-0	<0.000194	0.000194	mg/L	11.11.2019 21:06		38.84

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
2-Fluorobiphenyl	113	%	54-146	11.11.2019 21:06	
Nitrobenzene-d5	148	%	46-151	11.11.2019 21:06	
Terphenyl-D14	98	%	51-139	11.11.2019 21:06	

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW25**
Lab Sample Id: 642698-004

Matrix: Water
Date Collected: 11.07.2019 15:25

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Date Prep: 11.11.2019 14:33

Prep Method: SW5030B
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acetone	67-64-1	<0.100	0.100	mg/L	11.11.2019 16:43		1
Benzene	71-43-2	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Bromobenzene	108-86-1	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Bromochloromethane	74-97-5	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Bromodichloromethane	75-27-4	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Bromoform	75-25-2	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Methyl bromide	74-83-9	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Methyl ethyl ketone	78-93-3	<0.0500	0.0500	mg/L	11.11.2019 16:43		1
n-Butylbenzene	104-51-8	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Sec-Butylbenzene	135-98-8	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
tert-Butylbenzene	98-06-6	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Carbon Disulfide	75-15-0	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Carbon Tetrachloride	56-23-5	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Chlorobenzene	108-90-7	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Chloroethane	75-00-3	<0.0100	0.0100	mg/L	11.11.2019 16:43		1
Chloroform	67-66-3	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1-Chlorohexane	544-10-5	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Methyl Chloride	74-87-3	<0.0100	0.0100	mg/L	11.11.2019 16:43		1
2-Chlorotoluene	95-49-8	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
4-Chlorotoluene	106-43-4	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Cyclohexane	110-82-7	<0.00500	0.00500	mg/L	11.11.2019 16:43	*	1
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Dibromochloromethane	124-48-1	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
1,2-Dibromo-3-Chloropropane	96-12-8	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,2-Dibromoethane	106-93-4	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Methylene Bromide	74-95-3	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,2-Dichlorobenzene	95-50-1	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,3-Dichlorobenzene	541-73-1	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,4-Dichlorobenzene	106-46-7	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Dichlorodifluoromethane	75-71-8	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,1-Dichloroethane	75-34-3	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,2-Dichloroethane	107-06-2	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,1-Dichloroethene	75-35-4	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
cis-1,2-Dichloroethylene	156-59-2	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
trans-1,2-dichloroethylene	156-60-5	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,2-Dichloropropane	78-87-5	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
1,3-Dichloropropane	142-28-9	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
2,2-Dichloropropane	594-20-7	<0.00500	0.00500	mg/L	11.11.2019 16:43		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW25**
Lab Sample Id: 642698-004

Matrix: Water
Date Collected: 11.07.2019 15:25

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Date Prep: 11.11.2019 14:33

Prep Method: SW5030B
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1-Dichloropropene	563-58-6	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
cis-1,3-Dichloropropene	10061-01-5	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
trans-1,3-dichloropropene	10061-02-6	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Hexachlorobutadiene	87-68-3	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
2-Hexanone	591-78-6	<0.0500	0.0500	mg/L	11.11.2019 16:43		1
Isopropylbenzene	98-82-8	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Methylcyclohexane	108-87-2	<0.0100	0.0100	mg/L	11.11.2019 16:43		1
Methylene Chloride	75-09-2	<0.0100	0.0100	mg/L	11.11.2019 16:43		1
Methyl iodide	74-88-4	<0.0200	0.0200	mg/L	11.11.2019 16:43		1
4-Methyl-2-Pentanone	108-10-1	<0.0500	0.0500	mg/L	11.11.2019 16:43		1
MTBE	1634-04-4	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Naphthalene	91-20-3	<0.0100	0.0100	mg/L	11.11.2019 16:43		1
n-Propylbenzene	103-65-1	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Styrene	100-42-5	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,1,1,2-Tetrachloroethane	630-20-6	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,1,2,2-Tetrachloroethane	79-34-5	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Tetrachloroethene	127-18-4	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Toluene	108-88-3	**0.00591**	0.00100	mg/L	11.11.2019 16:43		1
1,2,3-Trichlorobenzene	87-61-6	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
1,2,4-Trichlorobenzene	120-82-1	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
1,1,1-Trichloroethane	71-55-6	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
1,1,2-Trichloroethane	79-00-5	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Trichloroethylene	79-01-6	**0.0129**	0.00500	mg/L	11.11.2019 16:43		1
Trichlorofluoromethane	75-69-4	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,2,3-Trichloropropane	96-18-4	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,2,4-Trimethylbenzene	95-63-6	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
1,3,5-Trimethylbenzene	108-67-8	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
m,p-Xylenes	179601-23-1	<0.0100	0.0100	mg/L	11.11.2019 16:43		1
Vinyl Acetate	108-05-4	<0.0500	0.0500	mg/L	11.11.2019 16:43		1
Vinyl Chloride	75-01-4	<0.00200	0.00200	mg/L	11.11.2019 16:43		1
1,3-Butadiene	106-99-0	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Dicyclopentadiene	77-73-6	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
n-Hexane	110-54-3	<0.00500	0.00500	mg/L	11.11.2019 16:43		1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	11.11.2019 16:43		1
Total Trihalomethanes		<0.00100	0.00100	mg/L	11.11.2019 16:43		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-MW25**
Lab Sample Id: 642698-004

Matrix: Water
Date Collected: 11.07.2019 15:25

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Prep Method: SW5030B
% Solids:

Date Prep: 11.11.2019 14:33

SUB: AZ0765

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	99	%	75-131	11.11.2019 16:43	
1,2-Dichloroethane-D4	100	%	63-144	11.11.2019 16:43	
Toluene-D8	100	%	80-117	11.11.2019 16:43	
4-Bromofluorobenzene	101	%	74-124	11.11.2019 16:43	

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB03-110819**
Matrix: Water
Date Received:11.08.2019 14:40
Lab Sample Id: 642698-005
Date Collected: 11.08.2019 12:00

Analytical Method: VOCs by SW-846 8260C
Prep Method: SW5030B
Tech: EZA
% Solids:
Analyst: EZA
Date Prep: 11.11.2019 11:10
Seq Number: 3107053
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acetone	67-64-1	<0.100	0.100	mg/L	11.11.2019 13:37		1
Benzene	71-43-2	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Bromobenzene	108-86-1	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Bromochloromethane	74-97-5	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Bromodichloromethane	75-27-4	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Bromoform	75-25-2	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Methyl bromide	74-83-9	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Methyl ethyl ketone	78-93-3	<0.0500	0.0500	mg/L	11.11.2019 13:37		1
n-Butylbenzene	104-51-8	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Sec-Butylbenzene	135-98-8	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
tert-Butylbenzene	98-06-6	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Carbon Disulfide	75-15-0	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Carbon Tetrachloride	56-23-5	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Chlorobenzene	108-90-7	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Chloroethane	75-00-3	<0.0100	0.0100	mg/L	11.11.2019 13:37		1
Chloroform	67-66-3	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1-Chlorohexane	544-10-5	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Methyl Chloride	74-87-3	<0.0100	0.0100	mg/L	11.11.2019 13:37		1
2-Chlorotoluene	95-49-8	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
4-Chlorotoluene	106-43-4	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Cyclohexane	110-82-7	<0.00500	0.00500	mg/L	11.11.2019 13:37	*	1
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Dibromochloromethane	124-48-1	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
1,2-Dibromo-3-Chloropropane	96-12-8	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,2-Dibromoethane	106-93-4	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Methylene Bromide	74-95-3	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,2-Dichlorobenzene	95-50-1	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,3-Dichlorobenzene	541-73-1	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,4-Dichlorobenzene	106-46-7	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Dichlorodifluoromethane	75-71-8	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,1-Dichloroethane	75-34-3	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,2-Dichloroethane	107-06-2	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,1-Dichloroethene	75-35-4	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
cis-1,2-Dichloroethylene	156-59-2	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
trans-1,2-dichloroethylene	156-60-5	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,2-Dichloropropane	78-87-5	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
1,3-Dichloropropane	142-28-9	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
2,2-Dichloropropane	594-20-7	<0.00500	0.00500	mg/L	11.11.2019 13:37		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB03-110819**
Matrix: Water
Date Received:11.08.2019 14:40
Lab Sample Id: 642698-005
Date Collected: 11.08.2019 12:00

Analytical Method: VOCs by SW-846 8260C
Prep Method: SW5030B
Tech: EZA
% Solids:
Analyst: EZA
Date Prep: 11.11.2019 11:10
Seq Number: 3107053
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1-Dichloropropene	563-58-6	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
cis-1,3-Dichloropropene	10061-01-5	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
trans-1,3-dichloropropene	10061-02-6	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Hexachlorobutadiene	87-68-3	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
2-Hexanone	591-78-6	<0.0500	0.0500	mg/L	11.11.2019 13:37		1
Isopropylbenzene	98-82-8	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Methylcyclohexane	108-87-2	<0.0100	0.0100	mg/L	11.11.2019 13:37		1
Methylene Chloride	75-09-2	<0.0100	0.0100	mg/L	11.11.2019 13:37		1
Methyl iodide	74-88-4	<0.0200	0.0200	mg/L	11.11.2019 13:37		1
4-Methyl-2-Pentanone	108-10-1	<0.0500	0.0500	mg/L	11.11.2019 13:37		1
MTBE	1634-04-4	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Naphthalene	91-20-3	<0.0100	0.0100	mg/L	11.11.2019 13:37		1
n-Propylbenzene	103-65-1	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Styrene	100-42-5	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,1,1,2-Tetrachloroethane	630-20-6	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,1,2,2-Tetrachloroethane	79-34-5	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Tetrachloroethene	127-18-4	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Toluene	108-88-3	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,2,3-Trichlorobenzene	87-61-6	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
1,2,4-Trichlorobenzene	120-82-1	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
1,1,1-Trichloroethane	71-55-6	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
1,1,2-Trichloroethane	79-00-5	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Trichloroethylene	79-01-6	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Trichlorofluoromethane	75-69-4	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,2,3-Trichloropropane	96-18-4	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,2,4-Trimethylbenzene	95-63-6	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
1,3,5-Trimethylbenzene	108-67-8	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
m,p-Xylenes	179601-23-1	<0.0100	0.0100	mg/L	11.11.2019 13:37		1
Vinyl Acetate	108-05-4	<0.0500	0.0500	mg/L	11.11.2019 13:37		1
Vinyl Chloride	75-01-4	<0.00200	0.00200	mg/L	11.11.2019 13:37		1
1,3-Butadiene	106-99-0	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Dicyclopentadiene	77-73-6	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
n-Hexane	110-54-3	<0.00500	0.00500	mg/L	11.11.2019 13:37		1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	11.11.2019 13:37		1
Total Trihalomethanes		<0.00100	0.00100	mg/L	11.11.2019 13:37		1

Certificate of Analytical Results 642698

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB03-110819**
Lab Sample Id: 642698-005

Matrix: Water
Date Collected: 11.08.2019 12:00

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107053

Prep Method: SW5030B
% Solids:

Date Prep: 11.11.2019 11:10

SUB: AZ0765

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	97	%	75-131	11.11.2019 13:37	
1,2-Dichloroethane-D4	100	%	63-144	11.11.2019 13:37	
Toluene-D8	97	%	80-117	11.11.2019 13:37	
4-Bromofluorobenzene	100	%	74-124	11.11.2019 13:37	

QC Summary 642698

APS

APS MGP Douglas, AZ

Analytical Method: **Recoverable Metals,Total, by EPA 200.8** Prep Method: E200.8P

Seq Number: 3107096 Matrix: Water Date Prep: 11.11.2019

MB Sample Id: 7690038-1-BLK LCS Sample Id: 7690038-1-BKS LCSD Sample Id: 7690038-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<0.00200	0.100	0.0934	93	0.0961	96	85-115	3	20	mg/L	11.11.2019 17:39	
Arsenic	<0.00400	0.100	0.0940	94	0.0952	95	85-115	1	20	mg/L	11.11.2019 17:39	
Barium	<0.00400	0.100	0.0961	96	0.0971	97	85-115	1	20	mg/L	11.11.2019 17:39	
Beryllium	<0.00200	0.100	0.0952	95	0.0959	96	85-115	1	20	mg/L	11.11.2019 17:39	
Cadmium	<0.00200	0.100	0.0966	97	0.0972	97	85-115	1	20	mg/L	11.11.2019 17:39	
Chromium	<0.00400	0.100	0.0976	98	0.0969	97	85-115	1	20	mg/L	11.11.2019 17:39	
Cobalt	<0.00200	0.100	0.0961	96	0.0967	97	85-115	1	20	mg/L	11.11.2019 17:39	
Copper	<0.00400	0.100	0.0979	98	0.0978	98	85-115	0	20	mg/L	11.11.2019 17:39	
Lead	<0.00200	0.100	0.0983	98	0.0987	99	85-115	0	20	mg/L	11.11.2019 17:39	
Manganese	<0.00200	0.100	0.0972	97	0.0969	97	85-115	0	20	mg/L	11.11.2019 17:39	
Molybdenum	<0.00200	0.100	0.0966	97	0.0966	97	85-115	0	20	mg/L	11.11.2019 17:39	
Nickel	<0.00200	0.100	0.0958	96	0.0954	95	85-115	0	20	mg/L	11.11.2019 17:39	
Selenium	<0.00200	0.100	0.0956	96	0.0965	97	85-115	1	20	mg/L	11.11.2019 17:39	
Silver	<0.00200	0.0500	0.0483	97	0.0476	95	85-115	1	20	mg/L	11.11.2019 17:39	
Thallium	<0.00200	0.100	0.0991	99	0.0988	99	85-115	0	20	mg/L	11.11.2019 17:39	

Analytical Method: **Recoverable Metals,Total, by EPA 200.8** Prep Method: E200.8P

Seq Number: 3107096 Matrix: Drinking Water Date Prep: 11.11.2019

Parent Sample Id: 642607-001 MS Sample Id: 642607-001 S MSD Sample Id: 642607-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<0.00200	0.100	0.101	101	0.102	102	70-130	1	20	mg/L	11.11.2019 17:47	
Arsenic	<0.00400	0.100	0.0993	99	0.100	100	70-130	1	20	mg/L	11.11.2019 17:47	
Barium	0.239	0.100	0.345	106	0.349	110	70-130	1	20	mg/L	11.11.2019 17:47	
Beryllium	<0.00200	0.100	0.0986	99	0.0971	97	70-130	2	20	mg/L	11.11.2019 17:47	
Cadmium	<0.00200	0.100	0.0947	95	0.0963	96	70-130	2	20	mg/L	11.11.2019 17:47	
Chromium	<0.00400	0.100	0.0989	99	0.101	101	70-130	2	20	mg/L	11.11.2019 17:47	
Cobalt	<0.00200	0.100	0.0974	97	0.0972	97	70-130	0	20	mg/L	11.11.2019 17:47	
Copper	<0.00400	0.100	0.100	100	0.100	100	70-130	0	20	mg/L	11.11.2019 17:47	
Lead	<0.00200	0.100	0.100	100	0.100	100	70-130	0	20	mg/L	11.11.2019 17:47	
Manganese	0.137	0.100	0.235	98	0.236	99	70-130	0	20	mg/L	11.11.2019 17:47	
Molybdenum	0.00479	0.100	0.104	99	0.106	101	70-130	2	20	mg/L	11.11.2019 17:47	
Nickel	<0.00200	0.100	0.0967	97	0.0978	98	70-130	1	20	mg/L	11.11.2019 17:47	
Selenium	<0.00200	0.100	0.0988	99	0.0998	100	70-130	1	20	mg/L	11.11.2019 17:47	
Silver	<0.00200	0.0500	0.0461	92	0.0468	94	70-130	2	20	mg/L	11.11.2019 17:47	
Thallium	<0.00200	0.100	0.101	101	0.100	100	70-130	1	20	mg/L	11.11.2019 17:47	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **Recoverable Metals,Total, by EPA 200.8** Prep Method: E200.8P
Seq Number: 3107096 Matrix: Water Date Prep: 11.11.2019
Parent Sample Id: 642666-026 MS Sample Id: 642666-026 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Antimony	<0.00200	0.100	0.0978	98	70-130	mg/L	11.11.2019 18:38	
Arsenic	0.00532	0.100	0.101	96	70-130	mg/L	11.11.2019 18:38	
Barium	0.0132	0.100	0.109	96	70-130	mg/L	11.11.2019 18:38	
Beryllium	<0.00200	0.100	0.0947	95	70-130	mg/L	11.11.2019 18:38	
Cadmium	<0.00200	0.100	0.0969	97	70-130	mg/L	11.11.2019 18:38	
Chromium	0.00112	0.100	0.0970	96	70-130	mg/L	11.11.2019 18:38	
Cobalt	<0.00200	0.100	0.0964	96	70-130	mg/L	11.11.2019 18:38	
Copper	0.00551	0.100	0.102	96	70-130	mg/L	11.11.2019 18:38	
Lead	0.00197	0.100	0.100	98	70-130	mg/L	11.11.2019 18:38	
Manganese	0.00295	0.100	0.0997	97	70-130	mg/L	11.11.2019 18:38	
Molybdenum	0.00126	0.100	0.0995	98	70-130	mg/L	11.11.2019 18:38	
Nickel	0.000604	0.100	0.0958	95	70-130	mg/L	11.11.2019 18:38	
Selenium	<0.00200	0.100	0.0970	97	70-130	mg/L	11.11.2019 18:38	
Silver	<0.00200	0.0500	0.0479	96	70-130	mg/L	11.11.2019 18:38	
Thallium	<0.00200	0.100	0.0985	99	70-130	mg/L	11.11.2019 18:38	

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P
Seq Number: 3107186 Matrix: Water Date Prep: 11.12.2019
MB Sample Id: 7690127-1-BLK LCS Sample Id: 7690127-1-BKS LCSD Sample Id: 7690127-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00201	101	0.00201	101	85-115	0	20	mg/L	11.12.2019 13:50	

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P
Seq Number: 3107186 Matrix: Waste Water Date Prep: 11.12.2019
Parent Sample Id: 642284-001 MS Sample Id: 642284-001 S MSD Sample Id: 642284-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.0000770	0.00200	0.00178	85	0.00180	86	70-130	1	20	mg/L	11.12.2019 14:29	

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P
Seq Number: 3107186 Matrix: Waste Water Date Prep: 11.12.2019
Parent Sample Id: 642463-001 MS Sample Id: 642463-001 S MSD Sample Id: 642463-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00179	90	0.00182	91	70-130	2	20	mg/L	11.12.2019 13:55	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 642698

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by SW846 8270D SIM** Prep Method: SW3511

Seq Number: 3107128 Matrix: Water Date Prep: 11.10.2019

MB Sample Id: 7689986-1-BLK LCS Sample Id: 7689986-1-BKS LCSD Sample Id: 7689986-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1-Methylnaphthalene	<0.000182	0.0182	0.0170	93	0.0178	98	70-126	5	30	mg/L	11.11.2019 11:15	
2-Methylnaphthalene	<0.000182	0.0182	0.0166	91	0.0173	95	74-121	4	30	mg/L	11.11.2019 11:15	
Acenaphthene	<0.000182	0.0182	0.0168	92	0.0182	100	75-127	8	30	mg/L	11.11.2019 11:15	
Acenaphthylene	<0.000182	0.0182	0.0177	97	0.0191	105	78-133	8	30	mg/L	11.11.2019 11:15	
Anthracene	<0.000182	0.0182	0.0180	99	0.0192	105	73-145	6	30	mg/L	11.11.2019 11:15	
Benzo(a)anthracene	<0.000182	0.0182	0.0180	99	0.0189	104	77-131	5	30	mg/L	11.11.2019 11:15	
Benzo(a)pyrene	<0.000182	0.0182	0.0168	92	0.0176	97	56-163	5	30	mg/L	11.11.2019 11:15	
Benzo(b)fluoranthene	<0.000182	0.0182	0.0178	98	0.0186	102	74-138	4	30	mg/L	11.11.2019 11:15	
Benzo(g,h,i)perylene	<0.000182	0.0182	0.0167	92	0.0175	96	77-127	5	30	mg/L	11.11.2019 11:15	
Benzo(k)fluoranthene	<0.000182	0.0182	0.0153	84	0.0158	87	67-142	3	30	mg/L	11.11.2019 11:15	
Chrysene	<0.000182	0.0182	0.0162	89	0.0169	93	66-126	4	30	mg/L	11.11.2019 11:15	
Dibenz(a,h)anthracene	<0.000182	0.0182	0.0173	95	0.0179	98	71-142	3	30	mg/L	11.11.2019 11:15	
Fluoranthene	<0.000182	0.0182	0.0183	101	0.0196	108	78-138	7	30	mg/L	11.11.2019 11:15	
Fluorene	<0.000182	0.0182	0.0175	96	0.0188	103	79-128	7	30	mg/L	11.11.2019 11:15	
Indeno(1,2,3-c,d)Pyrene	<0.000182	0.0182	0.0172	95	0.0180	99	76-140	5	30	mg/L	11.11.2019 11:15	
Naphthalene	<0.000364	0.0182	0.0161	88	0.0169	93	72-122	5	30	mg/L	11.11.2019 11:15	
Phenanthrene	<0.000182	0.0182	0.0172	95	0.0185	102	76-129	7	30	mg/L	11.11.2019 11:15	
Pyrene	<0.000182	0.0182	0.0173	95	0.0184	101	74-138	6	30	mg/L	11.11.2019 11:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	109		96		115		54-146	%	11.11.2019 11:15
Nitrobenzene-d5	94		81		98		46-151	%	11.11.2019 11:15
Terphenyl-D14	111		96		112		51-139	%	11.11.2019 11:15

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by SW846 8270D SIM** Prep Method: SW3511

Seq Number: 3107128 Matrix: Water Date Prep: 11.10.2019

Parent Sample Id: 642698-001 MS Sample Id: 642698-001 S MSD Sample Id: 642698-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1-Methylnaphthalene	<0.000197	0.0197	0.0185	94	0.0182	93	70-126	2	30	mg/L	11.11.2019 17:13	
2-Methylnaphthalene	<0.000197	0.0197	0.0178	90	0.0175	90	74-121	2	30	mg/L	11.11.2019 17:13	
Acenaphthene	<0.000197	0.0197	0.0182	92	0.0183	94	75-127	1	30	mg/L	11.11.2019 17:13	
Acenaphthylene	<0.000197	0.0197	0.0183	93	0.0183	94	78-133	0	30	mg/L	11.11.2019 17:13	
Anthracene	<0.000197	0.0197	0.0185	94	0.0181	93	73-145	2	30	mg/L	11.11.2019 17:13	
Benzo(a)anthracene	<0.000197	0.0197	0.0180	91	0.0178	91	77-131	1	30	mg/L	11.11.2019 17:13	
Benzo(a)pyrene	<0.000197	0.0197	0.0175	89	0.0175	90	56-163	0	30	mg/L	11.11.2019 17:13	
Benzo(b)fluoranthene	<0.000197	0.0197	0.0184	93	0.0184	94	74-138	0	30	mg/L	11.11.2019 17:13	
Benzo(g,h,i)perylene	<0.000197	0.0197	0.0161	82	0.0162	83	77-127	1	30	mg/L	11.11.2019 17:13	
Benzo(k)fluoranthene	<0.000197	0.0197	0.0173	88	0.0176	90	67-142	2	30	mg/L	11.11.2019 17:13	
Chrysene	<0.000197	0.0197	0.0164	83	0.0166	85	66-126	1	30	mg/L	11.11.2019 17:13	
Dibenz(a,h)anthracene	<0.000197	0.0197	0.0169	86	0.0171	88	71-142	1	30	mg/L	11.11.2019 17:13	
Fluoranthene	<0.000197	0.0197	0.0189	96	0.0182	93	78-138	4	30	mg/L	11.11.2019 17:13	
Fluorene	<0.000197	0.0197	0.0188	95	0.0186	95	79-128	1	30	mg/L	11.11.2019 17:13	
Indeno(1,2,3-c,d)Pyrene	<0.000197	0.0197	0.0168	85	0.0170	87	76-140	1	30	mg/L	11.11.2019 17:13	
Naphthalene	<0.000393	0.0197	0.0170	86	0.0170	87	72-122	0	30	mg/L	11.11.2019 17:13	
Phenanthrene	<0.000197	0.0197	0.0188	95	0.0184	94	76-129	2	30	mg/L	11.11.2019 17:13	
Pyrene	<0.000197	0.0197	0.0188	95	0.0186	95	74-138	1	30	mg/L	11.11.2019 17:13	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	104		107		54-146	%	11.11.2019 17:13
Nitrobenzene-d5	126		136		46-151	%	11.11.2019 17:13
Terphenyl-D14	104		110		51-139	%	11.11.2019 17:13

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3107053 Matrix: Water Date Prep: 11.11.2019

MB Sample Id: 7690074-1-BLK LCS Sample Id: 7690074-1-BKS LCSD Sample Id: 7690074-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetone	<0.0123	0.250	0.217	87	0.191	76	60-140	13	25	mg/L	11.11.2019 09:56	
Benzene	<0.00100	0.0500	0.0525	105	0.0523	105	66-142	0	25	mg/L	11.11.2019 09:56	
Bromobenzene	<0.00100	0.0500	0.0547	109	0.0564	113	75-125	3	25	mg/L	11.11.2019 09:56	
Bromochloromethane	<0.00100	0.0500	0.0506	101	0.0503	101	60-140	1	25	mg/L	11.11.2019 09:56	
Bromodichloromethane	<0.00100	0.0500	0.0547	109	0.0555	111	75-125	1	25	mg/L	11.11.2019 09:56	
Bromoform	<0.00500	0.0500	0.0576	115	0.0587	117	75-125	2	25	mg/L	11.11.2019 09:56	
Methyl bromide	<0.00500	0.0500	0.0444	89	0.0431	86	60-140	3	25	mg/L	11.11.2019 09:56	
Methyl ethyl ketone	<0.0500	0.250	0.241	96	0.224	90	60-140	7	25	mg/L	11.11.2019 09:56	
n-Butylbenzene	<0.000286	0.0500	0.0572	114	0.0585	117	75-125	2	25	mg/L	11.11.2019 09:56	
Sec-Butylbenzene	<0.00100	0.0500	0.0570	114	0.0573	115	75-125	1	25	mg/L	11.11.2019 09:56	
tert-Butylbenzene	<0.00100	0.0500	0.0571	114	0.0572	114	75-125	0	25	mg/L	11.11.2019 09:56	
Carbon Disulfide	<0.00500	0.0500	0.0456	91	0.0450	90	60-140	1	25	mg/L	11.11.2019 09:56	
Carbon Tetrachloride	<0.00500	0.0500	0.0531	106	0.0528	106	62-125	1	25	mg/L	11.11.2019 09:56	
Chlorobenzene	<0.00100	0.0500	0.0546	109	0.0546	109	60-133	0	25	mg/L	11.11.2019 09:56	
Chloroethane	<0.0100	0.0500	0.0449	90	0.0443	89	60-140	1	25	mg/L	11.11.2019 09:56	
Chloroform	<0.00100	0.0500	0.0503	101	0.0502	100	70-130	0	25	mg/L	11.11.2019 09:56	
1-Chlorohexane	<0.00500	0.0500	0.0549	110	0.0543	109	60-140	1	25	mg/L	11.11.2019 09:56	
Methyl Chloride	<0.0100	0.0500	0.0435	87	0.0422	84	60-140	3	25	mg/L	11.11.2019 09:56	
2-Chlorotoluene	<0.00100	0.0500	0.0550	110	0.0560	112	73-125	2	25	mg/L	11.11.2019 09:56	
4-Chlorotoluene	<0.00100	0.0500	0.0556	111	0.0567	113	74-125	2	25	mg/L	11.11.2019 09:56	
Cyclohexane	<0.00500	0.0500	0.0498	100	0.0493	99	70-130	1	25	mg/L	11.11.2019 09:56	
p-Cymene (p-Isopropyltoluene)	<0.00100	0.0500	0.0565	113	0.0570	114	75-125	1	25	mg/L	11.11.2019 09:56	
Dibromochloromethane	<0.00500	0.0500	0.0569	114	0.0576	115	73-125	1	25	mg/L	11.11.2019 09:56	
1,2-Dibromo-3-Chloropropane	<0.00100	0.0500	0.0556	111	0.0580	116	59-125	4	25	mg/L	11.11.2019 09:56	
1,2-Dibromoethane	<0.00500	0.0500	0.0559	112	0.0546	109	73-125	2	25	mg/L	11.11.2019 09:56	
Methylene Bromide	<0.00100	0.0500	0.0533	107	0.0538	108	69-127	1	25	mg/L	11.11.2019 09:56	
1,2-Dichlorobenzene	<0.00100	0.0500	0.0558	112	0.0570	114	75-125	2	25	mg/L	11.11.2019 09:56	
1,3-Dichlorobenzene	<0.00100	0.0500	0.0553	111	0.0569	114	75-125	3	25	mg/L	11.11.2019 09:56	
1,4-Dichlorobenzene	<0.00100	0.0500	0.0556	111	0.0570	114	75-125	2	25	mg/L	11.11.2019 09:56	
Dichlorodifluoromethane	<0.00100	0.0500	0.0503	101	0.0473	95	60-140	6	25	mg/L	11.11.2019 09:56	
1,1-Dichloroethane	<0.00100	0.0500	0.0490	98	0.0488	98	72-125	0	25	mg/L	11.11.2019 09:56	
1,2-Dichloroethane	<0.00100	0.0500	0.0532	106	0.0533	107	68-127	0	25	mg/L	11.11.2019 09:56	
1,1-Dichloroethene	<0.00100	0.0500	0.0510	102	0.0499	100	59-172	2	25	mg/L	11.11.2019 09:56	
cis-1,2-Dichloroethylene	<0.00100	0.0500	0.0488	98	0.0492	98	75-125	1	25	mg/L	11.11.2019 09:56	
trans-1,2-dichloroethylene	<0.00100	0.0500	0.0487	97	0.0495	99	75-125	2	25	mg/L	11.11.2019 09:56	
1,2-Dichloropropane	<0.00500	0.0500	0.0540	108	0.0546	109	74-125	1	25	mg/L	11.11.2019 09:56	
1,3-Dichloropropane	<0.00500	0.0500	0.0553	111	0.0550	110	75-125	1	25	mg/L	11.11.2019 09:56	
2,2-Dichloropropane	<0.00500	0.0500	0.0526	105	0.0517	103	75-125	2	25	mg/L	11.11.2019 09:56	
1,1-Dichloropropene	<0.00500	0.0500	0.0500	100	0.0498	100	75-125	0	25	mg/L	11.11.2019 09:56	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0543	109	0.0552	110	74-125	2	25	mg/L	11.11.2019 09:56	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0588	118	0.0577	115	66-125	2	25	mg/L	11.11.2019 09:56	
Ethylbenzene	<0.00100	0.0500	0.0542	108	0.0541	108	75-125	0	25	mg/L	11.11.2019 09:56	
Hexachlorobutadiene	<0.00500	0.0500	0.0550	110	0.0596	119	75-125	8	25	mg/L	11.11.2019 09:56	
2-Hexanone	<0.0500	0.250	0.259	104	0.244	98	60-140	6	25	mg/L	11.11.2019 09:56	
Isopropylbenzene	<0.00100	0.0500	0.0549	110	0.0543	109	75-125	1	25	mg/L	11.11.2019 09:56	
Methylcyclohexane	<0.0100	0.0500	0.0559	112	0.0555	111	75-125	1	25	mg/L	11.11.2019 09:56	
Methylene Chloride	<0.00191	0.0500	0.0469	94	0.0481	96	75-125	3	25	mg/L	11.11.2019 09:56	
Methyl iodide	<0.0200	0.0500	0.0501	100	0.0509	102	75-125	2	25	mg/L	11.11.2019 09:56	
4-Methyl-2-Pentanone	<0.0500	0.250	0.272	109	0.272	109	60-140	0	25	mg/L	11.11.2019 09:56	
MTBE	<0.00500	0.0500	0.0499	100	0.0505	101	65-135	1	25	mg/L	11.11.2019 09:56	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642698

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B
Seq Number: 3107053 Matrix: Water Date Prep: 11.11.2019
MB Sample Id: 7690074-1-BLK LCS Sample Id: 7690074-1-BKS LCSD Sample Id: 7690074-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Naphthalene	<0.0100	0.0500	0.0544	109	0.0603	121	70-130	10	25	mg/L	11.11.2019 09:56	
n-Propylbenzene	<0.00100	0.0500	0.0557	111	0.0563	113	75-125	1	25	mg/L	11.11.2019 09:56	
Styrene	<0.00100	0.0500	0.0554	111	0.0555	111	75-125	0	25	mg/L	11.11.2019 09:56	
1,1,1,2-Tetrachloroethane	<0.00100	0.0500	0.0568	114	0.0563	113	72-125	1	25	mg/L	11.11.2019 09:56	
1,1,2,2-Tetrachloroethane	<0.00100	0.0500	0.0565	113	0.0583	117	74-125	3	25	mg/L	11.11.2019 09:56	
Tetrachloroethene	<0.00100	0.0500	0.0549	110	0.0548	110	71-125	0	25	mg/L	11.11.2019 09:56	
Toluene	<0.00100	0.0500	0.0538	108	0.0533	107	59-139	1	25	mg/L	11.11.2019 09:56	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0507	101	0.0567	113	75-137	11	25	mg/L	11.11.2019 09:56	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0552	110	0.0596	119	75-135	8	25	mg/L	11.11.2019 09:56	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0514	103	0.0508	102	75-125	1	25	mg/L	11.11.2019 09:56	
1,1,2-Trichloroethane	<0.00100	0.0500	0.0569	114	0.0572	114	75-127	1	25	mg/L	11.11.2019 09:56	
Trichloroethylene	<0.00500	0.0500	0.0527	105	0.0528	106	62-137	0	25	mg/L	11.11.2019 09:56	
Trichlorofluoromethane	<0.00100	0.0500	0.0536	107	0.0519	104	60-140	3	25	mg/L	11.11.2019 09:56	
1,2,3-Trichloropropane	<0.00100	0.0500	0.0583	117	0.0601	120	75-125	3	25	mg/L	11.11.2019 09:56	
1,2,4-Trimethylbenzene	<0.00100	0.0500	0.0550	110	0.0567	113	75-125	3	25	mg/L	11.11.2019 09:56	
1,3,5-Trimethylbenzene	<0.00100	0.0500	0.0561	112	0.0562	112	70-125	0	25	mg/L	11.11.2019 09:56	
o-Xylene	<0.00100	0.0500	0.0540	108	0.0544	109	75-125	1	25	mg/L	11.11.2019 09:56	
m,p-Xylenes	<0.0100	0.100	0.109	109	0.109	109	75-125	0	25	mg/L	11.11.2019 09:56	
Vinyl Acetate	<0.0500	0.250	0.263	105	0.265	106	60-140	1	25	mg/L	11.11.2019 09:56	
Vinyl Chloride	<0.00200	0.0500	0.0482	96	0.0468	94	60-140	3	25	mg/L	11.11.2019 09:56	
1,3-Butadiene	<0.00100	0.0500	0.0484	97	0.0469	94	70-150	3	25	mg/L	11.11.2019 09:56	
Dicyclopentadiene	<0.00500	0.0500	0.0546	109	0.0554	111	70-120	1	25	mg/L	11.11.2019 09:56	
n-Hexane	<0.00500	0.0500	0.0501	100	0.0488	98	72-125	3	25	mg/L	11.11.2019 09:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	98		92		93		75-131	%	11.11.2019 09:56
1,2-Dichloroethane-D4	101		96		97		63-144	%	11.11.2019 09:56
Toluene-D8	99		101		101		80-117	%	11.11.2019 09:56
4-Bromofluorobenzene	100		102		101		74-124	%	11.11.2019 09:56

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3107053 Matrix: Water Date Prep: 11.11.2019

Parent Sample Id: 642698-001 MS Sample Id: 642698-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<0.0123	0.250	0.130	52	60-140	mg/L	11.11.2019 11:43	M2
Benzene	<0.00100	0.0500	0.0511	102	66-142	mg/L	11.11.2019 11:43	
Bromobenzene	<0.00100	0.0500	0.0511	102	75-125	mg/L	11.11.2019 11:43	
Bromochloromethane	<0.00100	0.0500	0.0498	100	60-140	mg/L	11.11.2019 11:43	
Bromodichloromethane	<0.00100	0.0500	0.0545	109	75-125	mg/L	11.11.2019 11:43	
Bromoform	<0.00500	0.0500	0.0514	103	75-125	mg/L	11.11.2019 11:43	
Methyl bromide	<0.00500	0.0500	0.0447	89	60-140	mg/L	11.11.2019 11:43	
Methyl ethyl ketone	<0.0500	0.250	0.196	78	60-140	mg/L	11.11.2019 11:43	
n-Butylbenzene	<0.00100	0.0500	0.0548	110	75-125	mg/L	11.11.2019 11:43	
Sec-Butylbenzene	<0.00100	0.0500	0.0549	110	75-125	mg/L	11.11.2019 11:43	
tert-Butylbenzene	<0.00100	0.0500	0.0543	109	75-125	mg/L	11.11.2019 11:43	
Carbon Disulfide	<0.00500	0.0500	0.0480	96	60-140	mg/L	11.11.2019 11:43	
Carbon Tetrachloride	<0.00500	0.0500	0.0552	110	62-125	mg/L	11.11.2019 11:43	
Chlorobenzene	<0.00100	0.0500	0.0504	101	60-133	mg/L	11.11.2019 11:43	
Chloroethane	<0.0100	0.0500	0.0495	99	60-140	mg/L	11.11.2019 11:43	
Chloroform	0.000390	0.0500	0.0526	104	70-130	mg/L	11.11.2019 11:43	
1-Chlorohexane	<0.00500	0.0500	0.0532	106	60-140	mg/L	11.11.2019 11:43	
Methyl Chloride	0.00125	0.0500	0.0473	92	60-140	mg/L	11.11.2019 11:43	
2-Chlorotoluene	<0.00100	0.0500	0.0531	106	73-125	mg/L	11.11.2019 11:43	
4-Chlorotoluene	<0.00100	0.0500	0.0547	109	74-125	mg/L	11.11.2019 11:43	
Cyclohexane	<0.00500	0.0500	0.0524	105	70-130	mg/L	11.11.2019 11:43	
p-Cymene (p-Isopropyltoluene)	<0.00100	0.0500	0.0544	109	75-125	mg/L	11.11.2019 11:43	
Dibromochloromethane	<0.00500	0.0500	0.0527	105	73-125	mg/L	11.11.2019 11:43	
1,2-Dibromo-3-Chloropropane	<0.00100	0.0500	0.0500	100	59-125	mg/L	11.11.2019 11:43	
1,2-Dibromoethane	<0.00500	0.0500	0.0469	94	73-125	mg/L	11.11.2019 11:43	
Methylene Bromide	<0.00100	0.0500	0.0497	99	69-127	mg/L	11.11.2019 11:43	
1,2-Dichlorobenzene	<0.00100	0.0500	0.0524	105	75-125	mg/L	11.11.2019 11:43	
1,3-Dichlorobenzene	<0.00100	0.0500	0.0517	103	75-125	mg/L	11.11.2019 11:43	
1,4-Dichlorobenzene	<0.00100	0.0500	0.0519	104	75-125	mg/L	11.11.2019 11:43	
Dichlorodifluoromethane	<0.00100	0.0500	0.0462	92	60-140	mg/L	11.11.2019 11:43	
1,1-Dichloroethane	<0.00100	0.0500	0.0517	103	72-125	mg/L	11.11.2019 11:43	
1,2-Dichloroethane	<0.00100	0.0500	0.0511	102	68-127	mg/L	11.11.2019 11:43	
1,1-Dichloroethene	0.00401	0.0500	0.0560	104	59-172	mg/L	11.11.2019 11:43	
cis-1,2-Dichloroethylene	0.000230	0.0500	0.0507	101	75-125	mg/L	11.11.2019 11:43	
trans-1,2-dichloroethylene	<0.00100	0.0500	0.0516	103	75-125	mg/L	11.11.2019 11:43	
1,2-Dichloropropane	<0.00500	0.0500	0.0519	104	74-125	mg/L	11.11.2019 11:43	
1,3-Dichloropropane	<0.00500	0.0500	0.0515	103	75-125	mg/L	11.11.2019 11:43	
2,2-Dichloropropane	<0.00500	0.0500	0.0559	112	75-125	mg/L	11.11.2019 11:43	
1,1-Dichloropropene	<0.00500	0.0500	0.0531	106	75-125	mg/L	11.11.2019 11:43	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0532	106	74-125	mg/L	11.11.2019 11:43	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0544	109	66-125	mg/L	11.11.2019 11:43	
Ethylbenzene	<0.00100	0.0500	0.0508	102	75-125	mg/L	11.11.2019 11:43	
Hexachlorobutadiene	<0.00500	0.0500	0.0454	91	75-125	mg/L	11.11.2019 11:43	
2-Hexanone	<0.0500	0.250	0.209	84	60-140	mg/L	11.11.2019 11:43	
Isopropylbenzene	<0.00100	0.0500	0.0514	103	75-125	mg/L	11.11.2019 11:43	
Methylcyclohexane	<0.0100	0.0500	0.0548	110	75-125	mg/L	11.11.2019 11:43	
Methylene Chloride	<0.0100	0.0500	0.0487	97	75-125	mg/L	11.11.2019 11:43	
Methyl iodide	<0.0200	0.0500	0.0448	90	75-125	mg/L	11.11.2019 11:43	
4-Methyl-2-Pentanone	<0.0500	0.250	0.258	103	60-140	mg/L	11.11.2019 11:43	
MTBE	<0.00500	0.0500	0.0524	105	65-135	mg/L	11.11.2019 11:43	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B
Seq Number: 3107053 Matrix: Water Date Prep: 11.11.2019
Parent Sample Id: 642698-001 MS Sample Id: 642698-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Naphthalene	<0.0100	0.0500	0.0477	95	70-130	mg/L	11.11.2019 11:43	
n-Propylbenzene	<0.00100	0.0500	0.0530	106	75-125	mg/L	11.11.2019 11:43	
Styrene	<0.00100	0.0500	0.0514	103	75-125	mg/L	11.11.2019 11:43	
1,1,1,2-Tetrachloroethane	<0.00100	0.0500	0.0523	105	72-125	mg/L	11.11.2019 11:43	
1,1,2,2-Tetrachloroethane	<0.00100	0.0500	0.0534	107	74-125	mg/L	11.11.2019 11:43	
Tetrachloroethene	0.000510	0.0500	0.0507	100	71-125	mg/L	11.11.2019 11:43	
Toluene	0.00770	0.0500	0.0585	102	59-139	mg/L	11.11.2019 11:43	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0429	86	75-137	mg/L	11.11.2019 11:43	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0484	97	75-135	mg/L	11.11.2019 11:43	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0530	106	75-125	mg/L	11.11.2019 11:43	
1,1,2-Trichloroethane	<0.00100	0.0500	0.0519	104	75-127	mg/L	11.11.2019 11:43	
Trichloroethylene	0.0688	0.0500	0.118	98	62-137	mg/L	11.11.2019 11:43	
Trichlorofluoromethane	<0.00100	0.0500	0.0544	109	60-140	mg/L	11.11.2019 11:43	
1,2,3-Trichloropropane	<0.00100	0.0500	0.0542	108	75-125	mg/L	11.11.2019 11:43	
1,2,4-Trimethylbenzene	<0.00100	0.0500	0.0526	105	75-125	mg/L	11.11.2019 11:43	
1,3,5-Trimethylbenzene	<0.00100	0.0500	0.0537	107	70-125	mg/L	11.11.2019 11:43	
o-Xylene	<0.00100	0.0500	0.0505	101	75-125	mg/L	11.11.2019 11:43	
m,p-Xylenes	<0.0100	0.100	0.102	102	75-125	mg/L	11.11.2019 11:43	
Vinyl Acetate	<0.0500	0.250	0.279	112	60-140	mg/L	11.11.2019 11:43	
Vinyl Chloride	<0.00200	0.0500	0.0505	101	60-140	mg/L	11.11.2019 11:43	
1,3-Butadiene	<0.00100	0.0500	0.0514	103	70-150	mg/L	11.11.2019 11:43	
Dicyclopentadiene	<0.00500	0.0500	0.0536	107	70-120	mg/L	11.11.2019 11:43	
n-Hexane	<0.00500	0.0500	0.0519	104	72-125	mg/L	11.11.2019 11:43	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
Dibromofluoromethane	99		75-131	%	11.11.2019 11:43
1,2-Dichloroethane-D4	105		63-144	%	11.11.2019 11:43
Toluene-D8	98		80-117	%	11.11.2019 11:43
4-Bromofluorobenzene	102		74-124	%	11.11.2019 11:43

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Chain of Custody

Work Order No: 1042698

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page ____ of ____

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:		Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☒ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine	X
P.O. Number:	700735632	Rush:	48hr.
Sampler's Name:	I. Dinkelman / L. Aarskold	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	2.8	Thermometer ID		
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:		
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8310 PAHs	200.7 metals (8 RCRA)	8260B - Total VOCs (HCl preserved)	8021B - BTEX
D-MW27	W	11/7/19	13:10		6	X	X	X	X
D-FD01-110719	W	11/7/19	13:30		6	X	X	X	X
D-MW26	W	11/7/19	14:20		6	X	X	X	X
D-MW25	W	11/7/19	15:25		6	X	X	X	X
D-TB03-110819	W	11/8/19	1200		1			X	
	W								
	W								
	W								

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11-8-19 1440	2		
3			4		
5			6		

Revised Date 051418 Rev 2018.1

Inter-Office Shipment

IOS Number : 51908

Date/Time:	11.08.2019	Created by:	Emily Petrunia	Please send report to:	Ruriko Konuma
Lab# From:	**Phoenix**	Delivery Priority:		Address:	2525 West Huntington Drive, Suite 102
Lab# To:	**Houston**	Air Bill No.:	776943469016	E-Mail:	ruriko.konuma@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
642698-001	W	D-MW27	11.07.2019 13:10	E245.1	Mercury, Total by EPA 245.1	11.12.2019	12.05.2019	RKO	HG	
642698-001	W	D-MW27	11.07.2019 13:10	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	11.12.2019	**11.14.2019 13:10**	RKO	ACNP ACNPY ANTH BZ	
642698-001	W	D-MW27	11.07.2019 13:10	SW8260C_AZ	VOCs by SW-846 8260C	11.12.2019	11.21.2019	RKO	ACE BDCME BRBZ BR(	
642698-001	W	D-MW27	11.07.2019 13:10	E200.8	Recoverable Metals,Total, by EPA 200.8	11.12.2019	05.05.2020	RKO	AG AS BA BE CD CO CI	
642698-002	W	D-FD01-110719	11.07.2019 13:30	E245.1	Mercury, Total by EPA 245.1	11.12.2019	12.05.2019	RKO	HG	
642698-002	W	D-FD01-110719	11.07.2019 13:30	E200.8	Recoverable Metals,Total, by EPA 200.8	11.12.2019	05.05.2020	RKO	AG AS BA BE CD CO CI	
642698-002	W	D-FD01-110719	11.07.2019 13:30	SW8260C_AZ	VOCs by SW-846 8260C	11.12.2019	11.21.2019	RKO	ACE BDCME BRBZ BR(	
642698-002	W	D-FD01-110719	11.07.2019 13:30	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	11.12.2019	**11.14.2019 13:30**	RKO	ACNP ACNPY ANTH BZ	
642698-003	W	D-MW26	11.07.2019 14:20	SW8260C_AZ	VOCs by SW-846 8260C	11.12.2019	11.21.2019	RKO	ACE BDCME BRBZ BR(	
642698-003	W	D-MW26	11.07.2019 14:20	E245.1	Mercury, Total by EPA 245.1	11.12.2019	12.05.2019	RKO	HG	
642698-003	W	D-MW26	11.07.2019 14:20	E200.8	Recoverable Metals,Total, by EPA 200.8	11.12.2019	05.05.2020	RKO	AG AS BA BE CD CO CI	
642698-003	W	D-MW26	11.07.2019 14:20	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	11.12.2019	**11.14.2019 14:20**	RKO	ACNP ACNPY ANTH BZ	
642698-004	W	D-MW25	11.07.2019 15:25	E245.1	Mercury, Total by EPA 245.1	11.12.2019	12.05.2019	RKO	HG	
642698-004	W	D-MW25	11.07.2019 15:25	E200.8	Recoverable Metals,Total, by EPA 200.8	11.12.2019	05.05.2020	RKO	AG AS BA BE CD CO CI	
642698-004	W	D-MW25	11.07.2019 15:25	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	11.12.2019	**11.14.2019 15:25**	RKO	ACNP ACNPY ANTH BZ	
642698-004	W	D-MW25	11.07.2019 15:25	SW8260C_AZ	VOCs by SW-846 8260C	11.12.2019	11.21.2019	RKO	ACE BDCME BRBZ BR(	
642698-005	W	D-TB03-110819	11.08.2019 12:00	SW8260C_AZ	VOCs by SW-846 8260C	11.12.2019	11.22.2019	RKO	ACE BDCME BRBZ BR(	

Inter Office Shipment or Sample Comments:

Relinquished By: Emily Petrunia

Date Relinquished: 11.08.2019

Received By: Monica Shakhshir

Date Received: 11.09.2019

Cooler Temperature: 1.8

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 51908

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Emily Petrunia **Date Sent:** 11.08.2019 05.49 PM

Received By: Monica Shakhshir **Date Received:** 11.09.2019 10.00 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 11.09.2019
Monica Shakhshir

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 11/08/2019 02:40:00 PM

Work Order #: 642698

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR#1

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Xenco Stafford
#18 Water VOC samples have zero headspace?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: EP

PH Device/Lot#: LRS-4801

Checklist completed by: Emily Petrunia Date: 11/08/2019

Checklist reviewed by: Date: 11/08/2019

Analytical Report 642702

for

APS

Project Manager: Judy Heywood

APS MGP Douglas, AZ

D3118600.A.CS.EV.DG.05-1B

11.18.2019

Collected By: Client

2525 West Huntington Drive, Suite 102
Tempe, AZ 85282
Ph: (480) 355-0900

Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Houston (EPA Lab code: TX00122): Arizona (AZ0765)
Xenco-Dallas (EPA Lab code: TX01468): Arizona (AZ0809)

11.18.2019

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: TWA Report No(s): **642702**
APS MGP Douglas, AZ
Project Address:

Judy Heywood:

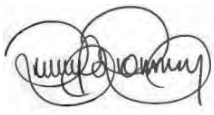
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the TWA Report Number(s) 642702. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the ADHS certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with ADHS standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and ADHS Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by TransWest Analytical. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 642702 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting TransWest Analytical to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,



Ruriko Konuma
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

CASE NARRATIVE

Client Name: APS

Project Name: APS MGP Douglas, AZ

Project ID: *D3118600.A.CS.EV.DG.0*
Work Order Number(s): *642702*

Report Date: *11.18.2019*
Date Received: *11.08.2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Flagging Criteria

Arizona Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

H5 This test is specified to be performed in the field within 15 minutes of sampling; Sample was received and analyzed past the regulatory holding time.

M2 Matrix spike recovery was low; the associated blank spike recovery was acceptable.

Sample Cross Reference 642702

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-TOTE-110719	W	11.07.2019 11:30		642702-001

Certificate of Analytical Results 642702

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TOTE-110719** Matrix: Water Date Received:11.08.2019 14:40

Lab Sample Id: 642702-001 Date Collected: 11.07.2019 11:30

Analytical Method: Total Cyanide by EPA 335.4 Prep Method: E335.4P

Tech: KCS % Solids:

Analyst: KCS Date Prep: 11.15.2019 14:00

Seq Number: 3107691 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	<0.00500	0.00500	mg/L	11.15.2019 16:48		1

Analytical Method: pH by SM4500-H

Tech: TNL % Solids:

Analyst: MON

Seq Number: 3107271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**7.94**		SU	11.12.2019 11:30	H5	1
Temperature	TEMP	**23.6**		Deg C	11.12.2019 11:30	H5	1

Analytical Method: Recoverable Metals,Total, by EPA 200.8 Prep Method: E200.8P

Tech: MLI % Solids:

Analyst: DEP Date Prep: 11.13.2019 10:52

Seq Number: 3107462 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Antimony	7440-36-0	<0.00200	0.00200	mg/L	11.13.2019 18:37		1
Arsenic	7440-38-2	**0.00547**	0.00400	mg/L	11.13.2019 18:37		1
Barium	7440-39-3	**0.0434**	0.00400	mg/L	11.13.2019 18:37		1
Beryllium	7440-41-7	<0.00200	0.00200	mg/L	11.13.2019 18:37		1
Cadmium	7440-43-9	<0.00200	0.00200	mg/L	11.13.2019 18:37		1
Chromium	7440-47-3	<0.00400	0.00400	mg/L	11.13.2019 18:37		1
Cobalt	7440-48-4	<0.00200	0.00200	mg/L	11.13.2019 18:37		1
Copper	7440-50-8	<0.00400	0.00400	mg/L	11.13.2019 18:37		1
Lead	7439-92-1	<0.00200	0.00200	mg/L	11.13.2019 18:37		1
Manganese	7439-96-5	**0.0655**	0.00200	mg/L	11.13.2019 18:37		1
Molybdenum	7439-98-7	**0.00428**	0.00200	mg/L	11.13.2019 18:37		1
Nickel	7440-02-0	**0.00255**	0.00200	mg/L	11.13.2019 18:37		1
Selenium	7782-49-2	**0.0105**	0.00200	mg/L	11.13.2019 18:37		1
Silver	7440-22-4	<0.00200	0.00200	mg/L	11.13.2019 18:37		1
Thallium	7440-28-0	<0.00200	0.00200	mg/L	11.13.2019 18:37		1

Certificate of Analytical Results 642702

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TOTE-110719** Matrix: Water Date Received:11.08.2019 14:40

Lab Sample Id: 642702-001 Date Collected: 11.07.2019 11:30

Analytical Method: Flash Point (200F) by SW 1010

Tech: JCL % Solids:

Analyst: JCL

Seq Number: 3107623 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Flash Point		>200		Deg F	11.15.2019 10:50		1

Analytical Method: Mercury, Total by EPA 245.1 Prep Method: E245.1P

Tech: ADS % Solids:

Analyst: ANJ Date Prep: 11.15.2019 07:55

Seq Number: 3107690 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	<0.000200	0.000200	mg/L	11.15.2019 13:02		1

Analytical Method: PCBs by EPA 608 Prep Method: E608P

Tech: AHI % Solids:

Analyst: SHM Date Prep: 11.12.2019 08:30

Seq Number: 3107206 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	<0.000500	0.000500	mg/L	11.12.2019 14:27		1
PCB-1221	11104-28-2	<0.000500	0.000500	mg/L	11.12.2019 14:27		1
PCB-1232	11141-16-5	<0.000500	0.000500	mg/L	11.12.2019 14:27		1
PCB-1242	53469-21-9	<0.000500	0.000500	mg/L	11.12.2019 14:27		1
PCB-1248	12672-29-6	<0.000500	0.000500	mg/L	11.12.2019 14:27		1
PCB-1254	11097-69-1	<0.000500	0.000500	mg/L	11.12.2019 14:27		1
PCB-1260	11096-82-5	<0.000500	0.000500	mg/L	11.12.2019 14:27		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Tetrachloro-m-xylene	40	%	18-126	11.12.2019 14:27	
Decachlorobiphenyl	89	%	15-136	11.12.2019 14:27	

Certificate of Analytical Results 642702

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TOTE-110719**
Matrix: Water
Date Received:11.08.2019 14:40
Lab Sample Id: 642702-001
Date Collected: 11.07.2019 11:30

Analytical Method: PAHs by SW846 8270D SIM
Prep Method: SW3511
Tech: AHI
% Solids:
Analyst: DNE
Date Prep: 11.13.2019 17:39
Seq Number: 3107507
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
2-Methylnaphthalene	91-57-6	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Acenaphthene	83-32-9	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Acenaphthylene	208-96-8	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Anthracene	120-12-7	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Benzo(a)anthracene	56-55-3	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Benzo(a)pyrene	50-32-8	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Benzo(b)fluoranthene	205-99-2	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Benzo(g,h,i)perylene	191-24-2	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Benzo(k)fluoranthene	207-08-9	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Chrysene	218-01-9	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Dibenz(a,h)anthracene	53-70-3	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Fluoranthene	206-44-0	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Fluorene	86-73-7	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Naphthalene	91-20-3	<0.000379	0.000379	mg/L	11.13.2019 19:10		37.89
Phenanthrene	85-01-8	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89
Pyrene	129-00-0	<0.000189	0.000189	mg/L	11.13.2019 19:10		37.89

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
2-Fluorobiphenyl	118	%	54-146	11.13.2019 19:10	
Nitrobenzene-d5	114	%	46-151	11.13.2019 19:10	
Terphenyl-D14	114	%	51-139	11.13.2019 19:10	

Certificate of Analytical Results 642702

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TOTE-110719**
Lab Sample Id: 642702-001

Matrix: Water
Date Collected: 11.07.2019 11:30

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107278

Date Prep: 11.12.2019 16:00

Prep Method: SW5030B
% Solids:

SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acetone	67-64-1	<0.100	0.100	mg/L	11.12.2019 19:56		1
Benzene	71-43-2	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Bromobenzene	108-86-1	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Bromochloromethane	74-97-5	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Bromodichloromethane	75-27-4	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Bromoform	75-25-2	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Methyl bromide	74-83-9	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Methyl ethyl ketone	78-93-3	<0.0500	0.0500	mg/L	11.12.2019 19:56		1
n-Butylbenzene	104-51-8	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Sec-Butylbenzene	135-98-8	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
tert-Butylbenzene	98-06-6	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Carbon Disulfide	75-15-0	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Carbon Tetrachloride	56-23-5	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Chlorobenzene	108-90-7	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Chloroethane	75-00-3	<0.0100	0.0100	mg/L	11.12.2019 19:56		1
Chloroform	67-66-3	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1-Chlorohexane	544-10-5	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Methyl Chloride	74-87-3	<0.0100	0.0100	mg/L	11.12.2019 19:56		1
2-Chlorotoluene	95-49-8	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
4-Chlorotoluene	106-43-4	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Cyclohexane	110-82-7	<0.00500	0.00500	mg/L	11.12.2019 19:56	*	1
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Dibromochloromethane	124-48-1	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
1,2-Dibromo-3-Chloropropane	96-12-8	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,2-Dibromoethane	106-93-4	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Methylene Bromide	74-95-3	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,2-Dichlorobenzene	95-50-1	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,3-Dichlorobenzene	541-73-1	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,4-Dichlorobenzene	106-46-7	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Dichlorodifluoromethane	75-71-8	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,1-Dichloroethane	75-34-3	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,2-Dichloroethane	107-06-2	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,1-Dichloroethene	75-35-4	**0.00173**	0.00100	mg/L	11.12.2019 19:56		1
cis-1,2-Dichloroethylene	156-59-2	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
trans-1,2-dichloroethylene	156-60-5	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,2-Dichloropropane	78-87-5	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
1,3-Dichloropropane	142-28-9	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
2,2-Dichloropropane	594-20-7	<0.00500	0.00500	mg/L	11.12.2019 19:56		1

Certificate of Analytical Results 642702

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TOTE-110719**
Matrix: Water
Date Received:11.08.2019 14:40
Lab Sample Id: 642702-001
Date Collected: 11.07.2019 11:30

Analytical Method: VOCs by SW-846 8260C
Prep Method: SW5030B
Tech: EZA
% Solids:
Analyst: EZA
Date Prep: 11.12.2019 16:00
Seq Number: 3107278
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1-Dichloropropene	563-58-6	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
cis-1,3-Dichloropropene	10061-01-5	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
trans-1,3-dichloropropene	10061-02-6	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Hexachlorobutadiene	87-68-3	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
2-Hexanone	591-78-6	<0.0500	0.0500	mg/L	11.12.2019 19:56		1
Isopropylbenzene	98-82-8	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Methylcyclohexane	108-87-2	<0.0100	0.0100	mg/L	11.12.2019 19:56		1
Methylene Chloride	75-09-2	<0.0100	0.0100	mg/L	11.12.2019 19:56		1
Methyl iodide	74-88-4	<0.0200	0.0200	mg/L	11.12.2019 19:56		1
4-Methyl-2-Pentanone	108-10-1	<0.0500	0.0500	mg/L	11.12.2019 19:56		1
MTBE	1634-04-4	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Naphthalene	91-20-3	<0.0100	0.0100	mg/L	11.12.2019 19:56		1
n-Propylbenzene	103-65-1	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Styrene	100-42-5	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,1,1,2-Tetrachloroethane	630-20-6	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,1,2,2-Tetrachloroethane	79-34-5	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Tetrachloroethene	127-18-4	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Toluene	108-88-3	**0.00262**	0.00100	mg/L	11.12.2019 19:56		1
1,2,3-Trichlorobenzene	87-61-6	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
1,2,4-Trichlorobenzene	120-82-1	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
1,1,1-Trichloroethane	71-55-6	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
1,1,2-Trichloroethane	79-00-5	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Trichloroethylene	79-01-6	**0.0302**	0.00500	mg/L	11.12.2019 19:56		1
Trichlorofluoromethane	75-69-4	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,2,3-Trichloropropane	96-18-4	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,2,4-Trimethylbenzene	95-63-6	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
1,3,5-Trimethylbenzene	108-67-8	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
m,p-Xylenes	179601-23-1	<0.0100	0.0100	mg/L	11.12.2019 19:56		1
Vinyl Acetate	108-05-4	<0.0500	0.0500	mg/L	11.12.2019 19:56		1
Vinyl Chloride	75-01-4	<0.00200	0.00200	mg/L	11.12.2019 19:56		1
1,3-Butadiene	106-99-0	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Dicyclopentadiene	77-73-6	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
n-Hexane	110-54-3	<0.00500	0.00500	mg/L	11.12.2019 19:56		1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	11.12.2019 19:56		1
Total Trihalomethanes		<0.00100	0.00100	mg/L	11.12.2019 19:56		1

Certificate of Analytical Results 642702

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TOTE-110719**
Lab Sample Id: 642702-001

Matrix: Water
Date Collected: 11.07.2019 11:30

Date Received:11.08.2019 14:40

Analytical Method: VOCs by SW-846 8260C
Tech: EZA
Analyst: EZA
Seq Number: 3107278

Prep Method: SW5030B
% Solids:

Date Prep: 11.12.2019 16:00

SUB: AZ0765

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	101	%	75-131	11.12.2019 19:56	
1,2-Dichloroethane-D4	113	%	63-144	11.12.2019 19:56	
Toluene-D8	100	%	80-117	11.12.2019 19:56	
4-Bromofluorobenzene	102	%	74-124	11.12.2019 19:56	

APS

APS MGP Douglas, AZ

Analytical Method: **Total Cyanide by EPA 335.4** Prep Method: E335.4P
Seq Number: 3107691 Matrix: Water Date Prep: 11.15.2019
MB Sample Id: 7690479-1-BLK LCS Sample Id: 7690479-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Cyanide, Total	<0.00198	0.100	0.103	103	90-110	mg/L	11.15.2019 16:39	

Analytical Method: **Total Cyanide by EPA 335.4** Prep Method: E335.4P
Seq Number: 3107691 Matrix: Waste Water Date Prep: 11.15.2019
Parent Sample Id: 642325-012 MS Sample Id: 642325-012 S MSD Sample Id: 642325-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	0.00565	0.200	0.200	97	0.196	95	85-115	2	20	mg/L	11.15.2019 16:44	

Analytical Method: **Total Cyanide by EPA 335.4** Prep Method: E335.4P
Seq Number: 3107691 Matrix: Waste Water Date Prep: 11.15.2019
Parent Sample Id: 642481-001 MS Sample Id: 642481-001 S MSD Sample Id: 642481-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	<0.00198	0.200	0.199	100	0.198	99	85-115	1	20	mg/L	11.15.2019 17:03	

Analytical Method: **pH by SM4500-H**
Seq Number: 3107271 Matrix: Water
Parent Sample Id: 642702-001 MD Sample Id: 642702-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	7.94	7.91	0	20	SU	11.12.2019 11:30	
Temperature	23.6	23.4	1	20	Deg C	11.12.2019 11:30	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642702

APS

APS MGP Douglas, AZ

Analytical Method: **Recoverable Metals,Total, by EPA 200.8** Prep Method: E200.8P

Seq Number: 3107462 Matrix: Water Date Prep: 11.13.2019

MB Sample Id: 7690220-1-BLK LCS Sample Id: 7690220-1-BKS LCSD Sample Id: 7690220-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<0.000380	0.100	0.105	105	0.107	107	85-115	2	20	mg/L	11.13.2019 18:31	
Arsenic	<0.000396	0.100	0.0997	100	0.100	100	85-115	0	20	mg/L	11.13.2019 18:31	
Barium	<0.000472	0.100	0.0979	98	0.0991	99	85-115	1	20	mg/L	11.13.2019 18:31	
Beryllium	<0.000166	0.100	0.0988	99	0.0989	99	85-115	0	20	mg/L	11.13.2019 18:31	
Cadmium	<0.00200	0.100	0.0992	99	0.0993	99	85-115	0	20	mg/L	11.13.2019 18:31	
Chromium	<0.000283	0.100	0.0993	99	0.100	100	85-115	1	20	mg/L	11.13.2019 18:31	
Cobalt	<0.00200	0.100	0.100	100	0.100	100	85-115	0	20	mg/L	11.13.2019 18:31	
Copper	<0.000747	0.100	0.0994	99	0.0993	99	85-115	0	20	mg/L	11.13.2019 18:31	
Lead	<0.000152	0.100	0.0980	98	0.0993	99	85-115	1	20	mg/L	11.13.2019 18:31	
Manganese	<0.000208	0.100	0.0988	99	0.0998	100	85-115	1	20	mg/L	11.13.2019 18:31	
Molybdenum	<0.000318	0.100	0.107	107	0.107	107	85-115	0	20	mg/L	11.13.2019 18:31	
Nickel	<0.000139	0.100	0.0996	100	0.0993	99	85-115	0	20	mg/L	11.13.2019 18:31	
Selenium	<0.000368	0.100	0.100	100	0.100	100	85-115	0	20	mg/L	11.13.2019 18:31	
Silver	<0.000159	0.0500	0.0532	106	0.0531	106	85-115	0	20	mg/L	11.13.2019 18:31	
Thallium	<0.000187	0.100	0.0976	98	0.0985	99	85-115	1	20	mg/L	11.13.2019 18:31	

Analytical Method: **Recoverable Metals,Total, by EPA 200.8** Prep Method: E200.8P

Seq Number: 3107462 Matrix: Water Date Prep: 11.13.2019

Parent Sample Id: 642702-001 MS Sample Id: 642702-001 S MSD Sample Id: 642702-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	0.00163	0.100	0.113	111	0.112	110	70-130	1	20	mg/L	11.13.2019 18:40	
Arsenic	0.00547	0.100	0.106	101	0.106	101	70-130	0	20	mg/L	11.13.2019 18:40	
Barium	0.0434	0.100	0.143	100	0.144	101	70-130	1	20	mg/L	11.13.2019 18:40	
Beryllium	0.000219	0.100	0.0973	97	0.0962	96	70-130	1	20	mg/L	11.13.2019 18:40	
Cadmium	<0.000115	0.100	0.0938	94	0.0950	95	70-130	1	20	mg/L	11.13.2019 18:40	
Chromium	0.00333	0.100	0.100	97	0.101	98	70-130	1	20	mg/L	11.13.2019 18:40	
Cobalt	0.000512	0.100	0.0981	98	0.0987	98	70-130	1	20	mg/L	11.13.2019 18:40	
Copper	0.00226	0.100	0.0985	96	0.0976	95	70-130	1	20	mg/L	11.13.2019 18:40	
Lead	<0.000152	0.100	0.0982	98	0.0988	99	70-130	1	20	mg/L	11.13.2019 18:40	
Manganese	0.0655	0.100	0.158	93	0.158	93	70-130	0	20	mg/L	11.13.2019 18:40	
Molybdenum	0.00428	0.100	0.112	108	0.113	109	70-130	1	20	mg/L	11.13.2019 18:40	
Nickel	0.00255	0.100	0.0979	95	0.0976	95	70-130	0	20	mg/L	11.13.2019 18:40	
Selenium	0.0105	0.100	0.108	98	0.109	99	70-130	1	20	mg/L	11.13.2019 18:40	
Silver	<0.000159	0.0500	0.0497	99	0.0501	100	70-130	1	20	mg/L	11.13.2019 18:40	
Thallium	<0.000187	0.100	0.0973	97	0.0971	97	70-130	0	20	mg/L	11.13.2019 18:40	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **Recoverable Metals,Total, by EPA 200.8** Prep Method: E200.8P
Seq Number: 3107462 Matrix: Drinking Water Date Prep: 11.13.2019
Parent Sample Id: 642301-001 MS Sample Id: 642301-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Antimony	<0.000380	0.100	0.110	110	70-130	mg/L	11.13.2019 19:32	
Arsenic	0.000419	0.100	0.0991	99	70-130	mg/L	11.13.2019 19:32	
Barium	0.000747	0.100	0.0993	99	70-130	mg/L	11.13.2019 19:32	
Beryllium	<0.000166	0.100	0.0958	96	70-130	mg/L	11.13.2019 19:32	
Cadmium	<0.000115	0.100	0.0943	94	70-130	mg/L	11.13.2019 19:32	
Chromium	0.000326	0.100	0.0951	95	70-130	mg/L	11.13.2019 19:32	
Cobalt	<0.000146	0.100	0.0954	95	70-130	mg/L	11.13.2019 19:32	
Copper	0.00266	0.100	0.0976	95	70-130	mg/L	11.13.2019 19:32	
Lead	<0.000152	0.100	0.0965	97	70-130	mg/L	11.13.2019 19:32	
Manganese	<0.000208	0.100	0.0946	95	70-130	mg/L	11.13.2019 19:32	
Molybdenum	0.00111	0.100	0.107	106	70-130	mg/L	11.13.2019 19:32	
Nickel	0.000568	0.100	0.0948	94	70-130	mg/L	11.13.2019 19:32	
Selenium	0.000789	0.100	0.0972	96	70-130	mg/L	11.13.2019 19:32	
Silver	<0.000159	0.0500	0.0499	100	70-130	mg/L	11.13.2019 19:32	
Thallium	<0.000187	0.100	0.0955	96	70-130	mg/L	11.13.2019 19:32	

Analytical Method: **Flash Point (200F) by SW 1010**
Seq Number: 3107623 Matrix: Water
Parent Sample Id: 642692-001 MD Sample Id: 642692-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	>180	>180	0	25	Deg F	11.15.2019 10:14	

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P
Seq Number: 3107690 Matrix: Water Date Prep: 11.15.2019
MB Sample Id: 7690396-1-BLK LCS Sample Id: 7690396-1-BKS LCSD Sample Id: 7690396-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00203	102	0.00198	99	85-115	2	20	mg/L	11.15.2019 12:28	

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P
Seq Number: 3107690 Matrix: Water Date Prep: 11.15.2019
Parent Sample Id: 642654-001 MS Sample Id: 642654-001 S MSD Sample Id: 642654-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00203	102	0.00203	102	70-130	0	20	mg/L	11.15.2019 14:40	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 642702

APS

APS MGP Douglas, AZ

Analytical Method: **Mercury, Total by EPA 245.1** Prep Method: E245.1P
Seq Number: 3107690 Matrix: Water Date Prep: 11.15.2019
Parent Sample Id: 643132-001 MS Sample Id: 643132-001 S MSD Sample Id: 643132-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.000771	39	0.000805	40	70-130	4	20	mg/L	11.15.2019 12:37	M2

Analytical Method: **PCBs by EPA 608** Prep Method: E608P
Seq Number: 3107206 Matrix: Water Date Prep: 11.11.2019
MB Sample Id: 7690044-1-BLK LCS Sample Id: 7690044-1-BKS LCSD Sample Id: 7690044-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.000500	0.00500	0.00337	67	0.00314	63	61-103	7	30	mg/L	11.11.2019 18:00	
PCB-1260	<0.000500	0.00500	0.00299	60	0.00273	55	37-130	9	30	mg/L	11.11.2019 18:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Tetrachloro-m-xylene	50		56		52		18-126	%	11.11.2019 18:00
Decachlorobiphenyl	69		59		57		15-136	%	11.11.2019 18:00

Analytical Method: **PAHs by SW846 8270D SIM** Prep Method: SW3511
Seq Number: 3107507 Matrix: Water Date Prep: 11.13.2019
MB Sample Id: 7690280-1-BLK LCS Sample Id: 7690280-1-BKS LCSD Sample Id: 7690280-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1-Methylnaphthalene	<0.000182	0.0182	0.0164	90	0.0183	101	70-126	11	30	mg/L	11.13.2019 18:37	
2-Methylnaphthalene	<0.000182	0.0182	0.0164	90	0.0181	99	74-121	10	30	mg/L	11.13.2019 18:37	
Acenaphthene	<0.000182	0.0182	0.0164	90	0.0185	102	75-127	12	30	mg/L	11.13.2019 18:37	
Acenaphthylene	<0.000182	0.0182	0.0166	91	0.0188	103	78-133	12	30	mg/L	11.13.2019 18:37	
Anthracene	<0.000182	0.0182	0.0168	92	0.0187	103	73-145	11	30	mg/L	11.13.2019 18:37	
Benzo(a)anthracene	<0.000182	0.0182	0.0161	88	0.0178	98	77-131	10	30	mg/L	11.13.2019 18:37	
Benzo(a)pyrene	<0.000182	0.0182	0.0161	88	0.0180	99	56-163	11	30	mg/L	11.13.2019 18:37	
Benzo(b)fluoranthene	<0.000182	0.0182	0.0169	93	0.0181	99	74-138	7	30	mg/L	11.13.2019 18:37	
Benzo(g,h,i)perylene	<0.000182	0.0182	0.0162	89	0.0181	99	77-127	11	30	mg/L	11.13.2019 18:37	
Benzo(k)fluoranthene	<0.000182	0.0182	0.0168	92	0.0193	106	67-142	14	30	mg/L	11.13.2019 18:37	
Chrysene	<0.000182	0.0182	0.0163	90	0.0182	100	66-126	11	30	mg/L	11.13.2019 18:37	
Dibenz(a,h)anthracene	<0.000182	0.0182	0.0161	88	0.0179	98	71-142	11	30	mg/L	11.13.2019 18:37	
Fluoranthene	<0.000182	0.0182	0.0165	91	0.0183	101	78-138	10	30	mg/L	11.13.2019 18:37	
Fluorene	<0.000182	0.0182	0.0168	92	0.0190	104	79-128	12	30	mg/L	11.13.2019 18:37	
Indeno(1,2,3-c,d)Pyrene	<0.000182	0.0182	0.0163	90	0.0180	99	76-140	10	30	mg/L	11.13.2019 18:37	
Naphthalene	<0.000364	0.0182	0.0161	88	0.0177	97	72-122	9	30	mg/L	11.13.2019 18:37	
Phenanthrene	<0.000182	0.0182	0.0163	90	0.0183	101	76-129	12	30	mg/L	11.13.2019 18:37	
Pyrene	<0.000182	0.0182	0.0171	94	0.0195	107	74-138	13	30	mg/L	11.13.2019 18:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	107		112		122		54-146	%	11.13.2019 18:37
Nitrobenzene-d5	107		111		120		46-151	%	11.13.2019 18:37
Terphenyl-D14	107		111		120		51-139	%	11.13.2019 18:37

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642702

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by SW846 8270D SIM** Prep Method: SW3511

Seq Number: 3107507 Matrix: Water Date Prep: 11.13.2019

Parent Sample Id: 642702-001 MS Sample Id: 642702-001 S MSD Sample Id: 642702-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1-Methylnaphthalene	<0.000188	0.0188	0.0174	93	0.0174	93	70-126	0	30	mg/L	11.13.2019 19:27	
2-Methylnaphthalene	<0.000188	0.0188	0.0174	93	0.0173	93	74-121	1	30	mg/L	11.13.2019 19:27	
Acenaphthene	<0.000188	0.0188	0.0175	93	0.0174	93	75-127	1	30	mg/L	11.13.2019 19:27	
Acenaphthylene	<0.000188	0.0188	0.0177	94	0.0176	94	78-133	1	30	mg/L	11.13.2019 19:27	
Anthracene	<0.000188	0.0188	0.0178	95	0.0177	95	73-145	1	30	mg/L	11.13.2019 19:27	
Benzo(a)anthracene	<0.000188	0.0188	0.0158	84	0.0159	85	77-131	1	30	mg/L	11.13.2019 19:27	
Benzo(a)pyrene	<0.000188	0.0188	0.0154	82	0.0154	82	56-163	0	30	mg/L	11.13.2019 19:27	
Benzo(b)fluoranthene	<0.000188	0.0188	0.0155	82	0.0155	83	74-138	0	30	mg/L	11.13.2019 19:27	
Benzo(g,h,i)perylene	<0.000188	0.0188	0.0150	80	0.0150	80	77-127	0	30	mg/L	11.13.2019 19:27	
Benzo(k)fluoranthene	<0.000188	0.0188	0.0168	89	0.0169	90	67-142	1	30	mg/L	11.13.2019 19:27	
Chrysene	<0.000188	0.0188	0.0164	87	0.0162	87	66-126	1	30	mg/L	11.13.2019 19:27	
Dibenz(a,h)anthracene	<0.000188	0.0188	0.0149	79	0.0149	80	71-142	0	30	mg/L	11.13.2019 19:27	
Fluoranthene	<0.000188	0.0188	0.0174	93	0.0173	93	78-138	1	30	mg/L	11.13.2019 19:27	
Fluorene	<0.000188	0.0188	0.0180	96	0.0177	95	79-128	2	30	mg/L	11.13.2019 19:27	
Indeno(1,2,3-c,d)Pyrene	<0.000188	0.0188	0.0149	79	0.0149	80	76-140	0	30	mg/L	11.13.2019 19:27	
Naphthalene	<0.000376	0.0188	0.0170	90	0.0170	91	72-122	0	30	mg/L	11.13.2019 19:27	
Phenanthrene	<0.000188	0.0188	0.0175	93	0.0174	93	76-129	1	30	mg/L	11.13.2019 19:27	
Pyrene	<0.000188	0.0188	0.0184	98	0.0184	98	74-138	0	30	mg/L	11.13.2019 19:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	112		111		54-146	%	11.13.2019 19:27
Nitrobenzene-d5	112		113		46-151	%	11.13.2019 19:27
Terphenyl-D14	102		104		51-139	%	11.13.2019 19:27

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3107278 Matrix: Water Date Prep: 11.12.2019

MB Sample Id: 7690216-1-BLK LCS Sample Id: 7690216-1-BKS LCSD Sample Id: 7690216-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetone	<0.100	0.250	0.193	77	0.180	72	60-140	7	25	mg/L	11.12.2019 13:38	
Benzene	<0.00100	0.0500	0.0511	102	0.0506	101	66-142	1	25	mg/L	11.12.2019 13:38	
Bromobenzene	<0.00100	0.0500	0.0488	98	0.0485	97	75-125	1	25	mg/L	11.12.2019 13:38	
Bromochloromethane	<0.00100	0.0500	0.0495	99	0.0466	93	60-140	6	25	mg/L	11.12.2019 13:38	
Bromodichloromethane	<0.00100	0.0500	0.0482	96	0.0470	94	75-125	3	25	mg/L	11.12.2019 13:38	
Bromoform	<0.00500	0.0500	0.0514	103	0.0507	101	75-125	1	25	mg/L	11.12.2019 13:38	
Methyl bromide	<0.00500	0.0500	0.0475	95	0.0447	89	60-140	6	25	mg/L	11.12.2019 13:38	
Methyl ethyl ketone	<0.0500	0.250	0.220	88	0.208	83	60-140	6	25	mg/L	11.12.2019 13:38	
n-Butylbenzene	<0.00100	0.0500	0.0497	99	0.0510	102	75-125	3	25	mg/L	11.12.2019 13:38	
Sec-Butylbenzene	<0.00100	0.0500	0.0496	99	0.0493	99	75-125	1	25	mg/L	11.12.2019 13:38	
tert-Butylbenzene	<0.00100	0.0500	0.0519	104	0.0518	104	75-125	0	25	mg/L	11.12.2019 13:38	
Carbon Disulfide	<0.00500	0.0500	0.0541	108	0.0526	105	60-140	3	25	mg/L	11.12.2019 13:38	
Carbon Tetrachloride	<0.00500	0.0500	0.0513	103	0.0505	101	62-125	2	25	mg/L	11.12.2019 13:38	
Chlorobenzene	<0.00100	0.0500	0.0491	98	0.0487	97	60-133	1	25	mg/L	11.12.2019 13:38	
Chloroethane	<0.0100	0.0500	0.0448	90	0.0423	85	60-140	6	25	mg/L	11.12.2019 13:38	
Chloroform	0.000420	0.0500	0.0495	99	0.0475	95	70-130	4	25	mg/L	11.12.2019 13:38	
1-Chlorohexane	<0.00500	0.0500	0.0479	96	0.0483	97	60-140	1	25	mg/L	11.12.2019 13:38	
Methyl Chloride	<0.0100	0.0500	0.0526	105	0.0497	99	60-140	6	25	mg/L	11.12.2019 13:38	
2-Chlorotoluene	<0.00100	0.0500	0.0498	100	0.0494	99	73-125	1	25	mg/L	11.12.2019 13:38	
4-Chlorotoluene	<0.00100	0.0500	0.0497	99	0.0489	98	74-125	2	25	mg/L	11.12.2019 13:38	
Cyclohexane	<0.00500	0.0500	0.0504	101	0.0485	97	70-130	4	25	mg/L	11.12.2019 13:38	
p-Cymene (p-Isopropyltoluene)	<0.00100	0.0500	0.0475	95	0.0485	97	75-125	2	25	mg/L	11.12.2019 13:38	
Dibromochloromethane	<0.00500	0.0500	0.0517	103	0.0513	103	73-125	1	25	mg/L	11.12.2019 13:38	
1,2-Dibromo-3-Chloropropane	<0.00100	0.0500	0.0432	86	0.0445	89	59-125	3	25	mg/L	11.12.2019 13:38	
1,2-Dibromoethane	<0.00500	0.0500	0.0521	104	0.0512	102	73-125	2	25	mg/L	11.12.2019 13:38	
Methylene Bromide	<0.00100	0.0500	0.0471	94	0.0456	91	69-127	3	25	mg/L	11.12.2019 13:38	
1,2-Dichlorobenzene	<0.00100	0.0500	0.0499	100	0.0497	99	75-125	0	25	mg/L	11.12.2019 13:38	
1,3-Dichlorobenzene	<0.00100	0.0500	0.0506	101	0.0501	100	75-125	1	25	mg/L	11.12.2019 13:38	
1,4-Dichlorobenzene	<0.00100	0.0500	0.0496	99	0.0499	100	75-125	1	25	mg/L	11.12.2019 13:38	
Dichlorodifluoromethane	<0.00100	0.0500	0.0607	121	0.0584	117	60-140	4	25	mg/L	11.12.2019 13:38	
1,1-Dichloroethane	<0.00100	0.0500	0.0505	101	0.0486	97	72-125	4	25	mg/L	11.12.2019 13:38	
1,2-Dichloroethane	<0.00100	0.0500	0.0447	89	0.0434	87	68-127	3	25	mg/L	11.12.2019 13:38	
1,1-Dichloroethene	<0.00100	0.0500	0.0503	101	0.0491	98	59-172	2	25	mg/L	11.12.2019 13:38	
cis-1,2-Dichloroethylene	<0.00100	0.0500	0.0495	99	0.0476	95	75-125	4	25	mg/L	11.12.2019 13:38	
trans-1,2-dichloroethylene	<0.00100	0.0500	0.0510	102	0.0492	98	75-125	4	25	mg/L	11.12.2019 13:38	
1,2-Dichloropropane	<0.00500	0.0500	0.0506	101	0.0504	101	74-125	0	25	mg/L	11.12.2019 13:38	
1,3-Dichloropropane	<0.00500	0.0500	0.0531	106	0.0521	104	75-125	2	25	mg/L	11.12.2019 13:38	
2,2-Dichloropropane	<0.00500	0.0500	0.0523	105	0.0494	99	75-125	6	25	mg/L	11.12.2019 13:38	
1,1-Dichloropropene	<0.00500	0.0500	0.0551	110	0.0534	107	75-125	3	25	mg/L	11.12.2019 13:38	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0537	107	0.0524	105	74-125	2	25	mg/L	11.12.2019 13:38	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0541	108	0.0524	105	66-125	3	25	mg/L	11.12.2019 13:38	
Ethylbenzene	<0.000146	0.0500	0.0491	98	0.0487	97	75-125	1	25	mg/L	11.12.2019 13:38	
Hexachlorobutadiene	<0.00500	0.0500	0.0560	112	0.0578	116	75-125	3	25	mg/L	11.12.2019 13:38	
2-Hexanone	<0.0500	0.250	0.226	90	0.216	86	60-140	5	25	mg/L	11.12.2019 13:38	
Isopropylbenzene	<0.00100	0.0500	0.0499	100	0.0502	100	75-125	1	25	mg/L	11.12.2019 13:38	
Methylcyclohexane	<0.0100	0.0500	0.0470	94	0.0477	95	75-125	1	25	mg/L	11.12.2019 13:38	
Methylene Chloride	<0.00191	0.0500	0.0478	96	0.0460	92	75-125	4	25	mg/L	11.12.2019 13:38	
Methyl iodide	<0.0200	0.0500	0.0471	94	0.0460	92	75-125	2	25	mg/L	11.12.2019 13:38	
4-Methyl-2-Pentanone	<0.0500	0.250	0.218	87	0.211	84	60-140	3	25	mg/L	11.12.2019 13:38	
MTBE	<0.00500	0.0500	0.0486	97	0.0474	95	65-135	3	25	mg/L	11.12.2019 13:38	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642702

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3107278 Matrix: Water Date Prep: 11.12.2019

MB Sample Id: 7690216-1-BLK LCS Sample Id: 7690216-1-BKS LCSD Sample Id: 7690216-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Naphthalene	<0.0100	0.0500	0.0581	116	0.0566	113	70-130	3	25	mg/L	11.12.2019 13:38	
n-Propylbenzene	<0.00100	0.0500	0.0509	102	0.0502	100	75-125	1	25	mg/L	11.12.2019 13:38	
Styrene	<0.00100	0.0500	0.0526	105	0.0513	103	75-125	3	25	mg/L	11.12.2019 13:38	
1,1,1,2-Tetrachloroethane	<0.00100	0.0500	0.0484	97	0.0486	97	72-125	0	25	mg/L	11.12.2019 13:38	
1,1,2,2-Tetrachloroethane	<0.00100	0.0500	0.0482	96	0.0482	96	74-125	0	25	mg/L	11.12.2019 13:38	
Tetrachloroethene	<0.00100	0.0500	0.0494	99	0.0495	99	71-125	0	25	mg/L	11.12.2019 13:38	
Toluene	<0.000500	0.0500	0.0498	100	0.0497	99	59-139	0	25	mg/L	11.12.2019 13:38	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0567	113	0.0548	110	75-137	3	25	mg/L	11.12.2019 13:38	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0532	106	0.0526	105	75-135	1	25	mg/L	11.12.2019 13:38	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0498	100	0.0486	97	75-125	2	25	mg/L	11.12.2019 13:38	
1,1,2-Trichloroethane	<0.00100	0.0500	0.0522	104	0.0522	104	75-127	0	25	mg/L	11.12.2019 13:38	
Trichloroethylene	<0.00500	0.0500	0.0468	94	0.0462	92	62-137	1	25	mg/L	11.12.2019 13:38	
Trichlorofluoromethane	<0.00100	0.0500	0.0449	90	0.0437	87	60-140	3	25	mg/L	11.12.2019 13:38	
1,2,3-Trichloropropane	<0.00100	0.0500	0.0463	93	0.0454	91	75-125	2	25	mg/L	11.12.2019 13:38	
1,2,4-Trimethylbenzene	<0.00100	0.0500	0.0471	94	0.0476	95	75-125	1	25	mg/L	11.12.2019 13:38	
1,3,5-Trimethylbenzene	<0.00100	0.0500	0.0511	102	0.0518	104	70-125	1	25	mg/L	11.12.2019 13:38	
o-Xylene	<0.00100	0.0500	0.0521	104	0.0510	102	75-125	2	25	mg/L	11.12.2019 13:38	
m,p-Xylenes	<0.000330	0.100	0.101	101	0.0991	99	75-125	2	25	mg/L	11.12.2019 13:38	
Vinyl Acetate	<0.0500	0.250	0.206	82	0.197	79	60-140	4	25	mg/L	11.12.2019 13:38	
Vinyl Chloride	<0.00200	0.0500	0.0533	107	0.0510	102	60-140	4	25	mg/L	11.12.2019 13:38	
1,3-Butadiene	<0.00100	0.0500	0.0529	106	0.0508	102	70-150	4	25	mg/L	11.12.2019 13:38	
Dicyclopentadiene	<0.00500	0.0500	0.0417	83	0.0419	84	70-120	0	25	mg/L	11.12.2019 13:38	
n-Hexane	<0.00500	0.0500	0.0457	91	0.0452	90	72-125	1	25	mg/L	11.12.2019 13:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	96		101		97		75-131	%	11.12.2019 13:38
1,2-Dichloroethane-D4	111		103		100		63-144	%	11.12.2019 13:38
Toluene-D8	99		102		102		80-117	%	11.12.2019 13:38
4-Bromofluorobenzene	102		98		97		74-124	%	11.12.2019 13:38

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3107278 Matrix: Water Date Prep: 11.12.2019

Parent Sample Id: 642697-001 MS Sample Id: 642697-001 S MSD Sample Id: 642697-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetone	<5.00	12.5	13.7	110	15.4	123	60-140	12	25	mg/L	11.12.2019 12:51	
Benzene	<0.0500	2.50	2.25	90	2.22	89	66-142	1	25	mg/L	11.12.2019 12:51	
Bromobenzene	<0.0500	2.50	2.24	90	2.27	91	75-125	1	25	mg/L	11.12.2019 12:51	
Bromochloromethane	<0.0500	2.50	2.08	83	2.21	88	60-140	6	25	mg/L	11.12.2019 12:51	
Bromodichloromethane	<0.0500	2.50	2.27	91	2.28	91	75-125	0	25	mg/L	11.12.2019 12:51	
Bromoform	<0.250	2.50	2.36	94	2.41	96	75-125	2	25	mg/L	11.12.2019 12:51	
Methyl bromide	<0.250	2.50	1.83	73	1.95	78	60-140	6	25	mg/L	11.12.2019 12:51	
Methyl ethyl ketone	<2.50	12.5	11.4	91	12.8	102	60-140	12	25	mg/L	11.12.2019 12:51	
n-Butylbenzene	<0.0500	2.50	2.31	92	2.35	94	75-125	2	25	mg/L	11.12.2019 12:51	
Sec-Butylbenzene	<0.0500	2.50	2.40	96	2.47	99	75-125	3	25	mg/L	11.12.2019 12:51	
tert-Butylbenzene	<0.0500	2.50	2.36	94	2.43	97	75-125	3	25	mg/L	11.12.2019 12:51	
Carbon Disulfide	<0.250	2.50	1.60	64	1.66	66	60-140	4	25	mg/L	11.12.2019 12:51	
Carbon Tetrachloride	<0.250	2.50	2.23	89	2.32	93	62-125	4	25	mg/L	11.12.2019 12:51	
Chlorobenzene	<0.0500	2.50	2.24	90	2.28	91	60-133	2	25	mg/L	11.12.2019 12:51	
Chloroethane	<0.500	2.50	1.94	78	2.11	84	60-140	8	25	mg/L	11.12.2019 12:51	
Chloroform	<0.0500	2.50	2.14	86	2.26	90	70-130	5	25	mg/L	11.12.2019 12:51	
1-Chlorohexane	<0.250	2.50	2.17	87	2.18	87	60-140	0	25	mg/L	11.12.2019 12:51	
Methyl Chloride	<0.500	2.50	1.73	69	1.82	73	60-140	5	25	mg/L	11.12.2019 12:51	
2-Chlorotoluene	<0.0500	2.50	2.25	90	2.29	92	73-125	2	25	mg/L	11.12.2019 12:51	
4-Chlorotoluene	<0.0500	2.50	2.21	88	2.28	91	74-125	3	25	mg/L	11.12.2019 12:51	
Cyclohexane	<0.250	2.50	2.09	84	2.09	84	70-130	0	25	mg/L	11.12.2019 12:51	
p-Cymene (p-Isopropyltoluene)	<0.0500	2.50	2.35	94	2.43	97	75-125	3	25	mg/L	11.12.2019 12:51	
Dibromochloromethane	<0.250	2.50	2.52	101	2.47	99	73-125	2	25	mg/L	11.12.2019 12:51	
1,2-Dibromo-3-Chloropropane	<0.0500	2.50	1.88	75	2.21	88	59-125	16	25	mg/L	11.12.2019 12:51	
1,2-Dibromoethane	<0.250	2.50	2.36	94	2.39	96	73-125	1	25	mg/L	11.12.2019 12:51	
Methylene Bromide	<0.0500	2.50	2.09	84	2.13	85	69-127	2	25	mg/L	11.12.2019 12:51	
1,2-Dichlorobenzene	<0.0500	2.50	2.28	91	2.35	94	75-125	3	25	mg/L	11.12.2019 12:51	
1,3-Dichlorobenzene	<0.0500	2.50	2.30	92	2.37	95	75-125	3	25	mg/L	11.12.2019 12:51	
1,4-Dichlorobenzene	<0.0500	2.50	2.26	90	2.33	93	75-125	3	25	mg/L	11.12.2019 12:51	
Dichlorodifluoromethane	<0.0500	2.50	1.68	67	1.68	67	60-140	0	25	mg/L	11.12.2019 12:51	
1,1-Dichloroethane	<0.0500	2.50	2.10	84	2.17	87	72-125	3	25	mg/L	11.12.2019 12:51	
1,2-Dichloroethane	<0.0500	2.50	2.01	80	2.08	83	68-127	3	25	mg/L	11.12.2019 12:51	
1,1-Dichloroethene	<0.0500	2.50	2.00	80	2.07	83	59-172	3	25	mg/L	11.12.2019 12:51	
cis-1,2-Dichloroethylene	<0.0500	2.50	2.15	86	2.22	89	75-125	3	25	mg/L	11.12.2019 12:51	
trans-1,2-dichloroethylene	<0.0500	2.50	2.00	80	2.11	84	75-125	5	25	mg/L	11.12.2019 12:51	
1,2-Dichloropropane	<0.250	2.50	2.36	94	2.36	94	74-125	0	25	mg/L	11.12.2019 12:51	
1,3-Dichloropropane	<0.250	2.50	2.36	94	2.42	97	75-125	3	25	mg/L	11.12.2019 12:51	
2,2-Dichloropropane	<0.250	2.50	2.26	90	2.37	95	75-125	5	25	mg/L	11.12.2019 12:51	
1,1-Dichloropropene	<0.250	2.50	2.17	87	2.21	88	75-125	2	25	mg/L	11.12.2019 12:51	
cis-1,3-Dichloropropene	<0.250	2.50	2.40	96	2.47	99	74-125	3	25	mg/L	11.12.2019 12:51	
trans-1,3-dichloropropene	<0.250	2.50	2.42	97	2.45	98	66-125	1	25	mg/L	11.12.2019 12:51	
Ethylbenzene	<0.0500	2.50	2.23	89	2.26	90	75-125	1	25	mg/L	11.12.2019 12:51	
Hexachlorobutadiene	<0.250	2.50	2.51	100	2.59	104	75-125	3	25	mg/L	11.12.2019 12:51	
2-Hexanone	<2.50	12.5	11.3	90	12.1	97	60-140	7	25	mg/L	11.12.2019 12:51	
Isopropylbenzene	<0.0500	2.50	2.32	93	2.33	93	75-125	0	25	mg/L	11.12.2019 12:51	
Methylcyclohexane	<0.500	2.50	2.08	83	2.01	80	75-125	3	25	mg/L	11.12.2019 12:51	
Methylene Chloride	<0.0956	2.50	1.97	79	2.10	84	75-125	6	25	mg/L	11.12.2019 12:51	
Methyl iodide	<1.00	2.50	2.14	86	2.32	93	75-125	8	25	mg/L	11.12.2019 12:51	
4-Methyl-2-Pentanone	<2.50	12.5	10.4	83	10.9	87	60-140	5	25	mg/L	11.12.2019 12:51	
MTBE	<0.250	2.50	2.23	89	2.37	95	65-135	6	25	mg/L	11.12.2019 12:51	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

APS

APS MGP Douglas, AZ

Analytical Method: **VOCs by SW-846 8260C** Prep Method: SW5030B

Seq Number: 3107278 Matrix: Water Date Prep: 11.12.2019

Parent Sample Id: 642697-001 MS Sample Id: 642697-001 S MSD Sample Id: 642697-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Naphthalene	<0.500	2.50	2.29	92	2.63	105	70-130	14	25	mg/L	11.12.2019 12:51	
n-Propylbenzene	<0.0500	2.50	2.29	92	2.33	93	75-125	2	25	mg/L	11.12.2019 12:51	
Styrene	<0.0500	2.50	2.35	94	2.40	96	75-125	2	25	mg/L	11.12.2019 12:51	
1,1,1,2-Tetrachloroethane	<0.0500	2.50	2.40	96	2.36	94	72-125	2	25	mg/L	11.12.2019 12:51	
1,1,2,2-Tetrachloroethane	<0.0500	2.50	2.26	90	2.38	95	74-125	5	25	mg/L	11.12.2019 12:51	
Tetrachloroethene	<0.0500	2.50	2.16	86	2.07	83	71-125	4	25	mg/L	11.12.2019 12:51	
Toluene	<0.0500	2.50	2.28	91	2.25	90	59-139	1	25	mg/L	11.12.2019 12:51	
1,2,3-Trichlorobenzene	<0.250	2.50	2.30	92	2.57	103	75-137	11	25	mg/L	11.12.2019 12:51	
1,2,4-Trichlorobenzene	<0.250	2.50	2.28	91	2.42	97	75-135	6	25	mg/L	11.12.2019 12:51	
1,1,1-Trichloroethane	<0.250	2.50	2.17	87	2.28	91	75-125	5	25	mg/L	11.12.2019 12:51	
1,1,2-Trichloroethane	<0.0500	2.50	2.47	99	2.52	101	75-127	2	25	mg/L	11.12.2019 12:51	
Trichloroethylene	<0.250	2.50	2.25	90	2.27	91	62-137	1	25	mg/L	11.12.2019 12:51	
Trichlorofluoromethane	<0.0500	2.50	1.92	77	1.99	80	60-140	4	25	mg/L	11.12.2019 12:51	
1,2,3-Trichloropropane	<0.0500	2.50	2.18	87	2.28	91	75-125	4	25	mg/L	11.12.2019 12:51	
1,2,4-Trimethylbenzene	<0.0500	2.50	2.22	89	2.26	90	75-125	2	25	mg/L	11.12.2019 12:51	
1,3,5-Trimethylbenzene	<0.0500	2.50	2.28	91	2.32	93	70-125	2	25	mg/L	11.12.2019 12:51	
o-Xylene	<0.0500	2.50	2.33	93	2.35	94	75-125	1	25	mg/L	11.12.2019 12:51	
m,p-Xylenes	<0.500	5.00	4.51	90	4.60	92	75-125	2	25	mg/L	11.12.2019 12:51	
Vinyl Acetate	<2.50	12.5	11.1	89	11.8	94	60-140	6	25	mg/L	11.12.2019 12:51	
Vinyl Chloride	<0.100	2.50	1.94	78	2.02	81	60-140	4	25	mg/L	11.12.2019 12:51	
1,3-Butadiene	<0.0500	2.50	1.79	72	1.87	75	70-150	4	25	mg/L	11.12.2019 12:51	
Dicyclopentadiene	<0.250	2.50	2.25	90	2.29	92	70-120	2	25	mg/L	11.12.2019 12:51	
n-Hexane	<0.250	2.50	1.89	76	1.87	75	72-125	1	25	mg/L	11.12.2019 12:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	95		99		75-131	%	11.12.2019 12:51
1,2-Dichloroethane-D4	99		100		63-144	%	11.12.2019 12:51
Toluene-D8	104		102		80-117	%	11.12.2019 12:51
4-Bromofluorobenzene	98		98		74-124	%	11.12.2019 12:51

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: 642702

www.xenco.com Page 1 of 1

Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259	Email:	Judith.Heywood@aps.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: Arizona
Reporting: Level II ☒ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine	☒
P.O. Number:	700735632	Rush:	
Sampler's Name:		Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Temperature (°C):	2.8	Thermometer ID		
Received Intact:	Yes No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Total Containers:		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	~~8270~~ SIM PAHs 8310	~~6010B/7474~~ Total metals (8 RCRA) 200.7	8260B - Total VOCs (MeOH preserved)	~~8082~~ - PCBs 608	~~8015B~~ - Diesel Range Organics	SW846 Article 7.2 - Ignitability 1010	~~9045B~~ - pH 9045	~~9013/9014~~ - Total Cyanide 335.3	Work Order Notes
1 TOTE-110719	W	11-7-19	1130	—	12	X	X	X	X	X	X	X	X	
	S													
	S													
	S													
	S													
	S													
	S													
	S													

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		11-8 19:1900	2		
3			4		
5			6		

Final 1.000

Inter-Office Shipment

IOS Number : 51947

Date/Time:	11.08.2019	Created by:	Emily Petrunia	Please send report to:	Ruriko Konuma
Lab# From:	**Phoenix**	Delivery Priority:		Address:	2525 West Huntington Drive, Suite 102
Lab# To:	**Houston**	Air Bill No.:	776943469016	E-Mail:	ruriko.konuma@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
642702-001	W	D-TOTE-110719	11.07.2019 11:30	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	11.14.2019	**11.14.2019 11:30**	RKO	ACNP ACNPY ANTH BZ	
642702-001	W	D-TOTE-110719	11.07.2019 11:30	E608_PCB	PCBs by EPA 608	11.14.2019	**11.14.2019 11:30**	RKO	PCB1016 PCB1221 PCB1	
642702-001	W	D-TOTE-110719	11.07.2019 11:30	SW8260C_AZ	VOCs by SW-846 8260C	11.14.2019	11.21.2019	RKO	ACE BDCME BRBZ BR(	
642702-001	W	D-TOTE-110719	11.07.2019 11:30	E245.1	Mercury, Total by EPA 245.1	11.14.2019	12.05.2019	RKO	HG	
642702-001	W	D-TOTE-110719	11.07.2019 11:30	E200.8	Recoverable Metals,Total, by EPA 200.8	11.14.2019	05.05.2020	RKO	AG AS BA BE CD CO CI	
642702-001	W	D-TOTE-110719	11.07.2019 11:30	E335.4	Total Cyanide by EPA 335.4	11.14.2019	11.21.2019	RKO	CN	
642702-001	W	D-TOTE-110719	11.07.2019 11:30	SW1010_200F	Flash Point (200F) by SW 1010	11.14.2019	12.07.2019	RKO	FLASHPT	

Inter Office Shipment or Sample Comments:

Relinquished By: Emily Petrunia

Date Relinquished: 11.11.2019

Received By: Monica Shakhshir

Date Received: 11.09.2019

Cooler Temperature: 1.8

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 51947

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Emily Petrunia **Date Sent:** 11.08.2019 09.35 AM

Received By: Monica Shakhshir **Date Received:** 11.09.2019 10.00 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 11.09.2019
Monica Shakhshir

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 11/08/2019 02:40:00 PM

Work Order #: 642702

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR#1

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Xenco Stafford
#18 Water VOC samples have zero headspace?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: EP

PH Device/Lot#: LRS-4801

Checklist completed by: Emily Petrunia Date: 11/08/2019

Checklist reviewed by: Ruriko Konuma Date: 11/08/2019

Analytical Report 642703

for

APS

Project Manager: Judy Heywood

APS MGP Douglas, AZ

D3118600.A.CS.EV.DG.05-1B

11.19.2019

Collected By: Client

2525 West Huntington Drive, Suite 102
Tempe, AZ 85282
Ph: (480) 355-0900

Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Houston (EPA Lab code: TX00122): Arizona (AZ0765)
Xenco-Dallas (EPA Lab code: TX01468): Arizona (AZ0809)

11.19.2019

Project Manager: **Judy Heywood**
APS
P.O. Box 53999
Mail Station 8376
Phoenix, AZ 85072

Reference: TWA Report No(s): **642703**
APS MGP Douglas, AZ
Project Address:

Judy Heywood:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the TWA Report Number(s) 642703. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the ADHS certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with ADHS standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and ADHS Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by TransWest Analytical. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 642703 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting TransWest Analytical to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ruriko Konuma
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

CASE NARRATIVE

Client Name: APS

Project Name: APS MGP Douglas, AZ

Project ID: *D3118600.A.CS.EV.DG.0*
Work Order Number(s): *642703*

Report Date: *11.19.2019*
Date Received: *11.08.2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107624 PCBs by SW-846 8082A
642703-001 analyzed at a dilution due to physical characteristics.

Flagging Criteria

Arizona Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

M1 Matrix spike recovery was high; the associated blank spike recovery was acceptable.

M2 Matrix spike recovery was low; the associated blank spike recovery was acceptable.

Sample Cross Reference 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D-BIN-110719	S	11.07.2019 10:30		642703-001
D-TB02-110719	S	11.07.2019 10:00		642703-002

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-BIN-110719** Matrix: Soil Date Received:11.08.2019 14:40
Lab Sample Id: 642703-001 Date Collected: 11.07.2019 10:30

Analytical Method: Total Cyanide by SW 9012 Prep Method: E335.4P
Tech: KCS % Solids:
Analyst: KCS Date Prep: 11.12.2019 09:24 Basis: Wet Weight
Seq Number: 3107194 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Cyanide, Total	57-12-5	<0.0582	0.0582	mg/kg	11.12.2019 15:53	D1	11.65

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Solids:
Analyst: ANJ Date Prep: 11.14.2019 07:30 Basis: Wet Weight
Seq Number: 3107510 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	<0.0196	0.0196	mg/kg	11.14.2019 14:51	J	0.98

Analytical Method: Metals, RCRA List, by SW 6020 Prep Method: SW3050B
Tech: PJB % Solids:
Analyst: DEP Date Prep: 11.12.2019 10:00 Basis: Wet Weight
Seq Number: 3107240 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**11.1**	1.92	mg/kg	11.12.2019 21:40	D2	9.62
Barium	7440-39-3	**129**	3.85	mg/kg	11.12.2019 21:40	D2	9.62
Cadmium	7440-43-9	<1.92	1.92	mg/kg	11.12.2019 21:40	D1	9.62
Chromium	7440-47-3	**22.4**	3.85	mg/kg	11.12.2019 21:40	D2	9.62
Lead	7439-92-1	**27.0**	1.92	mg/kg	11.12.2019 21:40	D2	9.62
Selenium	7782-49-2	<1.92	1.92	mg/kg	11.12.2019 21:40	D1	9.62
Silver	7440-22-4	<1.92	1.92	mg/kg	11.12.2019 21:40	D1	9.62

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-BIN-110719** Matrix: Soil Date Received:11.08.2019 14:40

Lab Sample Id: 642703-001 Date Collected: 11.07.2019 10:30

Analytical Method: Ignitability Of Solids By SW1030

Tech: MON % Solids:

Analyst: TNL Basis: Wet Weight

Seq Number: 3107869

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Ignitability		NON-Ignitable	200	mm/2min	11.19.2019 08:00		1

Analytical Method: Paint Filter Liquids Test by SW 9095B

Tech: MON % Solids:

Analyst: TNL Basis: Wet Weight

Seq Number: 3107228

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	NO FREE LIQUI			11.12.2019 10:30		1

Analytical Method: Soil pH by SW-846 9045C

Tech: KBU % Solids:

Analyst: KBU Basis: Wet Weight

Seq Number: 3107197 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.02**		SU	11.12.2019 12:26		1
Temperature	TEMP	**25.1**		Deg C	11.12.2019 12:26	+	1

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-BIN-110719**
Lab Sample Id: 642703-001

Matrix: Soil
Date Collected: 11.07.2019 10:30

Date Received:11.08.2019 14:40

Analytical Method: PCBs by SW-846 8082A
Tech: AHI
Analyst: SHM
Seq Number: 3107624

Date Prep: 11.14.2019 12:15

Prep Method: SW3550
% Solids:
Basis: Wet Weight
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
PCB-1016	12674-11-2	<0.0333	0.0333	mg/kg	11.14.2019 22:02	D1	2
PCB-1221	11104-28-2	<0.0333	0.0333	mg/kg	11.14.2019 22:02	D1	2
PCB-1232	11141-16-5	<0.0333	0.0333	mg/kg	11.14.2019 22:02	D1	2
PCB-1242	53469-21-9	<0.0333	0.0333	mg/kg	11.14.2019 22:02	D1	2
PCB-1248	12672-29-6	<0.0333	0.0333	mg/kg	11.14.2019 22:02	D1	2
PCB-1254	11097-69-1	<0.0333	0.0333	mg/kg	11.14.2019 22:02	D1	2
PCB-1260	11096-82-5	<0.0333	0.0333	mg/kg	11.14.2019 22:02	D1	2

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Decachlorobiphenyl	95	%	39-125	11.14.2019 22:02	
Tetrachloro-m-xylene	63	%	37-124	11.14.2019 22:02	

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-BIN-110719**
Lab Sample Id: 642703-001

Matrix: Soil
Date Collected: 11.07.2019 10:30

Date Received:11.08.2019 14:40

Analytical Method: PAHs by 8270D SIM
Tech: JOZ
Analyst: DNE
Seq Number: 3107242

Date Prep: 11.12.2019 12:15

Prep Method: SW3550
% Solids:
Basis: Wet Weight
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Acenaphthene	83-32-9	<0.00167	0.00167	mg/kg	11.12.2019 16:08		1
Acenaphthylene	208-96-8	**0.00729**	0.00167	mg/kg	11.12.2019 16:08		1
Anthracene	120-12-7	**0.00602**	0.00167	mg/kg	11.12.2019 16:08		1
Benzo(a)anthracene	56-55-3	**0.0210**	0.00167	mg/kg	11.12.2019 16:08		1
Benzo(a)pyrene	50-32-8	**0.0337**	0.00167	mg/kg	11.12.2019 16:08		1
Benzo(b)fluoranthene	205-99-2	**0.0497**	0.00167	mg/kg	11.12.2019 16:08		1
Benzo(g,h,i)perylene	191-24-2	**0.0225**	0.00167	mg/kg	11.12.2019 16:08		1
Benzo(k)fluoranthene	207-08-9	**0.0148**	0.00167	mg/kg	11.12.2019 16:08		1
Chrysene	218-01-9	**0.0288**	0.00167	mg/kg	11.12.2019 16:08		1
Dibenz(a,h)Anthracene	53-70-3	<0.00167	0.00167	mg/kg	11.12.2019 16:08		1
Fluoranthene	206-44-0	**0.0597**	0.00167	mg/kg	11.12.2019 16:08		1
Fluorene	86-73-7	**0.00186**	0.00167	mg/kg	11.12.2019 16:08		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**0.0184**	0.00167	mg/kg	11.12.2019 16:08		1
Naphthalene	91-20-3	<0.0167	0.0167	mg/kg	11.12.2019 16:08		1
Phenanthrene	85-01-8	**0.0313**	0.00167	mg/kg	11.12.2019 16:08		1
Pyrene	129-00-0	**0.0716**	0.00167	mg/kg	11.12.2019 16:08		1

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Nitrobenzene-d5	125	%	31-130	11.12.2019 16:08	
2-Fluorobiphenyl	99	%	51-133	11.12.2019 16:08	
Terphenyl-D14	113	%	46-137	11.12.2019 16:08	

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-BIN-110719**
Lab Sample Id: 642703-001

Matrix: Soil
Date Collected: 11.07.2019 10:30

Date Received:11.08.2019 14:40

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107061

Date Prep: 11.11.2019 15:50

Prep Method: SW5035A
% Solids:
Basis: Wet Weight
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,1,1-Trichloroethane	71-55-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,1,2,2-Tetrachloroethane	79-34-5	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,1,2-Trichloroethane	79-00-5	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,1-Dichloroethane	75-34-3	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,1-Dichloroethene	75-35-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,1-Dichloropropene	563-58-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2,3-Trichlorobenzene	87-61-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2,3-Trichloropropane	96-18-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2,4-Trichlorobenzene	120-82-1	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2,4-Trimethylbenzene	95-63-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2-Dibromo-3-Chloropropane	96-12-8	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2-Dibromoethane	106-93-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2-Dichlorobenzene	95-50-1	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2-Dichloroethane	107-06-2	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,2-Dichloropropane	78-87-5	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,3,5-Trimethylbenzene	108-67-8	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,3-Dichlorobenzene	541-73-1	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,3-Dichloropropane	142-28-9	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,4-Dichlorobenzene	106-46-7	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
2,2-Dichloropropane	594-20-7	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
2-Butanone	78-93-3	<1.06	1.06	mg/kg	11.11.2019 20:12	U	52.97
2-Chlorotoluene	95-49-8	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
2-Hexanone	591-78-6	<2.65	2.65	mg/kg	11.11.2019 20:12	U	52.97
4-Chlorotoluene	106-43-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
4-Methyl-2-Pentanone	108-10-1	<2.65	2.65	mg/kg	11.11.2019 20:12	U	52.97
Acetone	67-64-1	<5.30	5.30	mg/kg	11.11.2019 20:12	U	52.97
Benzene	71-43-2	<0.0530	0.0530	mg/kg	11.11.2019 20:12	U	52.97
Bromobenzene	108-86-1	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Bromochloromethane	74-97-5	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Bromodichloromethane	75-27-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Bromoform	75-25-2	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Bromomethane	74-83-9	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Carbon Disulfide	75-15-0	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Carbon Tetrachloride	56-23-5	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Chlorobenzene	108-90-7	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Chloroethane	75-00-3	<0.530	0.530	mg/kg	11.11.2019 20:12	U	52.97
Chloroform	67-66-3	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-BIN-110719**
Lab Sample Id: 642703-001

Matrix: Soil
Date Collected: 11.07.2019 10:30

Date Received:11.08.2019 14:40

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107061

Date Prep: 11.11.2019 15:50

Prep Method: SW5035A
% Solids:
Basis: Wet Weight
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
cis-1,2-Dichloroethene	156-59-2	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
cis-1,3-Dichloropropene	10061-01-5	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Dibromochloromethane	124-48-1	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Dibromomethane	74-95-3	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Dichlorodifluoromethane	75-71-8	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Ethylbenzene	100-41-4	<0.0530	0.0530	mg/kg	11.11.2019 20:12	U	52.97
Hexachlorobutadiene	87-68-3	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Iodomethane (Methyl Iodide)	74-88-4	<1.06	1.06	mg/kg	11.11.2019 20:12	U	52.97
Isopropylbenzene	98-82-8	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
m,p-Xylenes	179601-23-1	<0.106	0.106	mg/kg	11.11.2019 20:12	U	52.97
Methylene Chloride	75-09-2	<1.06	1.06	mg/kg	11.11.2019 20:12	U	52.97
MTBE	1634-04-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Naphthalene	91-20-3	<0.530	0.530	mg/kg	11.11.2019 20:12	U	52.97
n-Butylbenzene	104-51-8	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
n-Propylbenzene	103-65-1	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
o-Xylene	95-47-6	<0.0530	0.0530	mg/kg	11.11.2019 20:12	U	52.97
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Sec-Butylbenzene	135-98-8	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Styrene	100-42-5	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
tert-Butylbenzene	98-06-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Tetrachloroethylene	127-18-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Toluene	108-88-3	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Total Xylenes	1330-20-7	<0.0530	0.0530	mg/kg	11.11.2019 20:12	U	52.97
trans-1,2-dichloroethene	156-60-5	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
trans-1,3-dichloropropene	10061-02-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Trichloroethene	79-01-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Trichlorofluoromethane	75-69-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Vinyl Acetate	108-05-4	<0.530	0.530	mg/kg	11.11.2019 20:12	U	52.97
Vinyl Chloride	75-01-4	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
1,3-Butadiene	106-99-0	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Cyclohexane	110-82-7	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Dicyclopentadiene	77-73-6	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Methylcyclohexane	108-87-2	<0.530	0.530	mg/kg	11.11.2019 20:12	U	52.97
n-Hexane	110-54-3	<0.530	0.530	mg/kg	11.11.2019 20:12	U	52.97
4-Ethyltoluene	622-96-8	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97
Propene	115-07-1	<0.265	0.265	mg/kg	11.11.2019 20:12	U	52.97

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-BIN-110719**
Lab Sample Id: 642703-001

Matrix: Soil
Date Collected: 11.07.2019 10:30

Date Received:11.08.2019 14:40

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107061

Date Prep: 11.11.2019 15:50

Prep Method: SW5035A
% Solids:
Basis: Wet Weight
SUB: AZ0765

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	96	%	53-142	11.11.2019 20:12	
1,2-Dichloroethane-D4	101	%	56-150	11.11.2019 20:12	
Toluene-D8	104	%	70-130	11.11.2019 20:12	
4-Bromofluorobenzene	96	%	68-152	11.11.2019 20:12	

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB02-110719**
Lab Sample Id: 642703-002

Matrix: Soil
Date Collected: 11.07.2019 10:00

Date Received:11.08.2019 14:40

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107061

Date Prep: 11.11.2019 15:50

Prep Method: SW5035A
% Solids:
Basis: Wet Weight
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
1,1,1,2-Tetrachloroethane	630-20-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,1,1-Trichloroethane	71-55-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,1,2,2-Tetrachloroethane	79-34-5	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,1,2-Trichloroethane	79-00-5	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,1-Dichloroethane	75-34-3	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,1-Dichloroethene	75-35-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,1-Dichloropropene	563-58-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2,3-Trichlorobenzene	87-61-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2,3-Trichloropropane	96-18-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2,4-Trichlorobenzene	120-82-1	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2,4-Trimethylbenzene	95-63-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2-Dibromo-3-Chloropropane	96-12-8	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2-Dibromoethane	106-93-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2-Dichlorobenzene	95-50-1	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2-Dichloroethane	107-06-2	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,2-Dichloropropane	78-87-5	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,3,5-Trimethylbenzene	108-67-8	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,3-Dichlorobenzene	541-73-1	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,3-Dichloropropane	142-28-9	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,4-Dichlorobenzene	106-46-7	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
2,2-Dichloropropane	594-20-7	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
2-Butanone	78-93-3	<1.00	1.00	mg/kg	11.11.2019 20:33	U	50
2-Chlorotoluene	95-49-8	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
2-Hexanone	591-78-6	<2.50	2.50	mg/kg	11.11.2019 20:33	U	50
4-Chlorotoluene	106-43-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
4-Methyl-2-Pentanone	108-10-1	<2.50	2.50	mg/kg	11.11.2019 20:33	U	50
Acetone	67-64-1	<5.00	5.00	mg/kg	11.11.2019 20:33	U	50
Benzene	71-43-2	<0.0500	0.0500	mg/kg	11.11.2019 20:33	U	50
Bromobenzene	108-86-1	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Bromochloromethane	74-97-5	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Bromodichloromethane	75-27-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Bromoform	75-25-2	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Bromomethane	74-83-9	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Carbon Disulfide	75-15-0	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Carbon Tetrachloride	56-23-5	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Chlorobenzene	108-90-7	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Chloroethane	75-00-3	<0.500	0.500	mg/kg	11.11.2019 20:33	U	50
Chloroform	67-66-3	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB02-110719**
Lab Sample Id: 642703-002

Matrix: Soil
Date Collected: 11.07.2019 10:00

Date Received:11.08.2019 14:40

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107061

Date Prep: 11.11.2019 15:50

Prep Method: SW5035A
% Solids:
Basis: Wet Weight
SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloromethane	74-87-3	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
cis-1,2-Dichloroethene	156-59-2	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
cis-1,3-Dichloropropene	10061-01-5	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Dibromochloromethane	124-48-1	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Dibromomethane	74-95-3	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Dichlorodifluoromethane	75-71-8	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Ethylbenzene	100-41-4	<0.0500	0.0500	mg/kg	11.11.2019 20:33	U	50
Hexachlorobutadiene	87-68-3	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Iodomethane (Methyl Iodide)	74-88-4	<1.00	1.00	mg/kg	11.11.2019 20:33	U	50
Isopropylbenzene	98-82-8	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
m,p-Xylenes	179601-23-1	<0.100	0.100	mg/kg	11.11.2019 20:33	U	50
Methylene Chloride	75-09-2	<1.00	1.00	mg/kg	11.11.2019 20:33	U	50
MTBE	1634-04-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Naphthalene	91-20-3	<0.500	0.500	mg/kg	11.11.2019 20:33	U	50
n-Butylbenzene	104-51-8	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
n-Propylbenzene	103-65-1	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
o-Xylene	95-47-6	<0.0500	0.0500	mg/kg	11.11.2019 20:33	U	50
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Sec-Butylbenzene	135-98-8	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Styrene	100-42-5	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
tert-Butylbenzene	98-06-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Tetrachloroethylene	127-18-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Toluene	108-88-3	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Total Xylenes	1330-20-7	<0.0500	0.0500	mg/kg	11.11.2019 20:33	U	50
trans-1,2-dichloroethene	156-60-5	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
trans-1,3-dichloropropene	10061-02-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Trichloroethene	79-01-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Trichlorofluoromethane	75-69-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Vinyl Acetate	108-05-4	<0.500	0.500	mg/kg	11.11.2019 20:33	U	50
Vinyl Chloride	75-01-4	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
1,3-Butadiene	106-99-0	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Cyclohexane	110-82-7	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Dicyclopentadiene	77-73-6	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Methylcyclohexane	108-87-2	<0.500	0.500	mg/kg	11.11.2019 20:33	U	50
n-Hexane	110-54-3	<0.500	0.500	mg/kg	11.11.2019 20:33	U	50
4-Ethyltoluene	622-96-8	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50
Propene	115-07-1	<0.250	0.250	mg/kg	11.11.2019 20:33	U	50

Certificate of Analytical Results 642703

APS, Phoenix, AZ

APS MGP Douglas, AZ

Sample Id: **D-TB02-110719**
Lab Sample Id: 642703-002

Matrix: Soil
Date Collected: 11.07.2019 10:00

Date Received:11.08.2019 14:40

Analytical Method: Volatiles by SW 8260C
Tech: SAD
Analyst: SAD
Seq Number: 3107061

Date Prep: 11.11.2019 15:50

Prep Method: SW5035A
% Solids:
Basis: Wet Weight
SUB: AZ0765

Surrogate	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	95	%	53-142	11.11.2019 20:33	
1,2-Dichloroethane-D4	99	%	56-150	11.11.2019 20:33	
Toluene-D8	101	%	70-130	11.11.2019 20:33	
4-Bromofluorobenzene	94	%	68-152	11.11.2019 20:33	

QC Summary 642703

APS

APS MGP Douglas, AZ

Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3107194 Matrix: Solid Date Prep: 11.12.2019
MB Sample Id: 7690106-1-BLK LCS Sample Id: 7690106-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Cyanide, Total	<0.0286	1.15	1.11	97	85-115	mg/kg	11.12.2019 15:33	

Analytical Method: **Total Cyanide by SW 9012** Prep Method: E335.4P
Seq Number: 3107194 Matrix: Soil Date Prep: 11.12.2019
Parent Sample Id: 642585-004 MS Sample Id: 642585-004 S MSD Sample Id: 642585-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	<0.0297	2.39	1.89	79	1.84	76	85-115	3	20	mg/kg	11.12.2019 15:48	M2

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3107510 Matrix: Solid Date Prep: 11.14.2019
MB Sample Id: 7690315-1-BLK LCS Sample Id: 7690315-1-BKS LCSD Sample Id: 7690315-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00349	0.182	0.174	96	0.181	99	80-120	4	20	mg/kg	11.14.2019 13:08	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3107510 Matrix: Soil Date Prep: 11.14.2019
Parent Sample Id: 642592-001 MS Sample Id: 642592-001 S MSD Sample Id: 642592-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00791	0.217	0.214	95	0.209	94	75-125	2	20	mg/kg	11.14.2019 15:01	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3107510 Matrix: Soil Date Prep: 11.14.2019
Parent Sample Id: 642672-005 MS Sample Id: 642672-005 S MSD Sample Id: 642672-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	0.00606	0.202	0.201	97	0.198	97	75-125	2	20	mg/kg	11.14.2019 13:13	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 642703

APS

APS MGP Douglas, AZ

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3107240 Matrix: Solid Date Prep: 11.12.2019
MB Sample Id: 7690131-1-BLK LCS Sample Id: 7690131-1-BKS LCSD Sample Id: 7690131-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.200	10.0	9.78	98	9.68	97	80-120	1	20	mg/kg	11.12.2019 20:19	
Barium	<0.400	10.0	9.78	98	9.67	97	80-120	1	20	mg/kg	11.12.2019 20:19	
Cadmium	<0.200	10.0	9.72	97	9.76	98	80-120	0	20	mg/kg	11.12.2019 20:19	
Chromium	<0.400	10.0	9.72	97	9.77	98	80-120	1	20	mg/kg	11.12.2019 20:19	
Lead	<0.200	10.0	9.84	98	9.82	98	80-120	0	20	mg/kg	11.12.2019 20:19	
Selenium	<0.200	10.0	9.79	98	9.81	98	80-120	0	20	mg/kg	11.12.2019 20:19	
Silver	<0.200	5.00	5.01	100	5.02	100	80-120	0	20	mg/kg	11.12.2019 20:19	

Analytical Method: **Metals, RCRA List, by SW 6020** Prep Method: SW3050B
Seq Number: 3107240 Matrix: Soil Date Prep: 11.12.2019
Parent Sample Id: 642586-001 MS Sample Id: 642586-001 S MSD Sample Id: 642586-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	2.52	12.6	15.6	104	12.8	98	75-125	20	30	mg/kg	11.12.2019 20:28	
Barium	83.2	12.6	102	149	86.1	28	75-125	17	30	mg/kg	11.12.2019 20:28	M1M2
Cadmium	<0.146	12.6	12.8	102	10.6	101	75-125	19	30	mg/kg	11.12.2019 20:28	
Chromium	15.0	12.6	29.6	116	24.6	91	75-125	18	30	mg/kg	11.12.2019 20:28	
Lead	14.4	12.6	29.3	118	24.4	95	75-125	18	30	mg/kg	11.12.2019 20:28	
Selenium	<0.623	12.6	13.7	109	11.2	101	75-125	20	30	mg/kg	11.12.2019 20:28	
Silver	<0.200	6.28	5.88	94	4.86	93	75-125	19	30	mg/kg	11.12.2019 20:28	

Analytical Method: **Paint Filter Liquids Test by SW 9095B**
Seq Number: 3107228 Matrix: Soil
Parent Sample Id: 642703-001 MD Sample Id: 642703-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	NO FREE LIQU	NO FREE L	0	0		11.12.2019 10:30	

Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3107197 Matrix: Soil
Parent Sample Id: 642671-001 MD Sample Id: 642671-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.40	8.41	0	20	SU	11.12.2019 12:26	
Temperature	23.2	23.5	1	25	Deg C	11.12.2019 12:26	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 642703

APS

APS MGP Douglas, AZ

Analytical Method: **Soil pH by SW-846 9045C**
Seq Number: 3107197 Matrix: Solid
Parent Sample Id: 642675-007 MD Sample Id: 642675-007 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.91	8.92	0	20	SU	11.12.2019 12:26	
Temperature	25.3	25.1	1	25	Deg C	11.12.2019 12:26	

Analytical Method: **PCBs by SW-846 8082A** Prep Method: SW3550
Seq Number: 3107624 Matrix: Solid Date Prep: 11.14.2019
MB Sample Id: 7690334-1-BLK LCS Sample Id: 7690334-1-BKS LCSD Sample Id: 7690334-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0167	0.167	0.111	66	0.110	66	54-121	1	20	mg/kg	11.14.2019 12:52	
PCB-1260	<0.0167	0.167	0.130	78	0.124	74	41-126	5	20	mg/kg	11.14.2019 12:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	93		92		87		39-125	%	11.14.2019 12:52
Tetrachloro-m-xylene	54		53		63		37-124	%	11.14.2019 12:52

Analytical Method: **PCBs by SW-846 8082A** Prep Method: SW3550
Seq Number: 3107624 Matrix: Soil Date Prep: 11.14.2019
Parent Sample Id: 642366-011 MS Sample Id: 642366-011 S MSD Sample Id: 642366-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.0167	0.167	0.134	80	0.136	81	54-121	1	20	mg/kg	11.14.2019 17:13	
PCB-1260	<0.0167	0.167	0.128	77	0.134	80	41-126	5	20	mg/kg	11.14.2019 17:13	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	95		93		39-125	%	11.14.2019 17:13
Tetrachloro-m-xylene	41		62		37-124	%	11.14.2019 17:13

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 642703

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3107242 Matrix: Solid Date Prep: 11.12.2019

MB Sample Id: 7690109-1-BLK LCS Sample Id: 7690109-1-BKS LCSD Sample Id: 7690109-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0273	82	0.0270	81	42-116	1	25	mg/kg	11.12.2019 10:57	
Acenaphthylene	<0.00167	0.0333	0.0264	79	0.0264	79	42-121	0	25	mg/kg	11.12.2019 10:57	
Anthracene	<0.00167	0.0333	0.0256	77	0.0256	77	44-120	0	25	mg/kg	11.12.2019 10:57	
Benzo(a)anthracene	<0.00167	0.0333	0.0286	86	0.0284	85	52-121	1	25	mg/kg	11.12.2019 10:57	
Benzo(a)pyrene	<0.00167	0.0333	0.0262	79	0.0263	79	50-128	0	25	mg/kg	11.12.2019 10:57	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0319	96	0.0303	91	49-137	5	25	mg/kg	11.12.2019 10:57	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0273	82	0.0270	81	47-132	1	25	mg/kg	11.12.2019 10:57	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0289	87	0.0304	91	48-133	5	25	mg/kg	11.12.2019 10:57	
Chrysene	<0.00167	0.0333	0.0280	84	0.0279	84	54-113	0	25	mg/kg	11.12.2019 10:57	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0294	88	0.0291	87	48-133	1	25	mg/kg	11.12.2019 10:57	
Fluoranthene	<0.00167	0.0333	0.0280	84	0.0278	83	54-128	1	25	mg/kg	11.12.2019 10:57	
Fluorene	<0.00167	0.0333	0.0281	84	0.0279	84	44-118	1	25	mg/kg	11.12.2019 10:57	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0289	87	0.0286	86	49-129	1	25	mg/kg	11.12.2019 10:57	
Naphthalene	<0.0167	0.0333	0.0267	80	0.0266	80	40-135	0	25	mg/kg	11.12.2019 10:57	
Phenanthrene	<0.00167	0.0333	0.0284	85	0.0281	84	44-119	1	25	mg/kg	11.12.2019 10:57	
Pyrene	<0.00167	0.0333	0.0304	91	0.0302	91	50-126	1	25	mg/kg	11.12.2019 10:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	115		120		122		31-130	%	11.12.2019 10:57
2-Fluorobiphenyl	94		97		99		51-133	%	11.12.2019 10:57
Terphenyl-D14	100		104		107		46-137	%	11.12.2019 10:57

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642703

APS

APS MGP Douglas, AZ

Analytical Method: **PAHs by 8270D SIM** Prep Method: SW3550

Seq Number: 3107242 Matrix: Soil Date Prep: 11.12.2019

Parent Sample Id: 642294-001 MS Sample Id: 642294-001 S MSD Sample Id: 642294-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<0.00167	0.0333	0.0272	82	0.0240	72	42-116	13	25	mg/kg	11.12.2019 14:45	
Acenaphthylene	<0.00167	0.0333	0.0268	80	0.0237	71	42-121	12	25	mg/kg	11.12.2019 14:45	
Anthracene	<0.00167	0.0333	0.0288	86	0.0256	77	44-120	12	25	mg/kg	11.12.2019 14:45	
Benzo(a)anthracene	<0.00167	0.0333	0.0308	92	0.0273	82	52-121	12	25	mg/kg	11.12.2019 14:45	
Benzo(a)pyrene	<0.00167	0.0333	0.0317	95	0.0280	84	50-128	12	25	mg/kg	11.12.2019 14:45	
Benzo(b)fluoranthene	<0.00167	0.0333	0.0356	107	0.0317	95	49-137	12	25	mg/kg	11.12.2019 14:45	
Benzo(g,h,i)perylene	<0.00167	0.0333	0.0218	65	0.0176	53	47-132	21	25	mg/kg	11.12.2019 14:45	
Benzo(k)fluoranthene	<0.00167	0.0333	0.0321	96	0.0289	87	48-133	10	25	mg/kg	11.12.2019 14:45	
Chrysene	<0.00167	0.0333	0.0297	89	0.0263	79	54-113	12	25	mg/kg	11.12.2019 14:45	
Dibenz(a,h)Anthracene	<0.00167	0.0333	0.0260	78	0.0218	65	48-133	18	25	mg/kg	11.12.2019 14:45	
Fluoranthene	<0.00167	0.0333	0.0296	89	0.0260	78	54-128	13	25	mg/kg	11.12.2019 14:45	
Fluorene	<0.00167	0.0333	0.0280	84	0.0248	74	44-118	12	25	mg/kg	11.12.2019 14:45	
Indeno(1,2,3-c,d)Pyrene	<0.00167	0.0333	0.0248	74	0.0206	62	49-129	19	25	mg/kg	11.12.2019 14:45	
Naphthalene	<0.0167	0.0333	0.0263	79	0.0234	70	40-135	12	25	mg/kg	11.12.2019 14:45	
Phenanthrene	<0.00167	0.0333	0.0292	88	0.0260	78	44-119	12	25	mg/kg	11.12.2019 14:45	
Pyrene	<0.00167	0.0333	0.0324	97	0.0284	85	50-126	13	25	mg/kg	11.12.2019 14:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Nitrobenzene-d5	124		106		31-130	%	11.12.2019 14:45
2-Fluorobiphenyl	101		87		51-133	%	11.12.2019 14:45
Terphenyl-D14	118		101		46-137	%	11.12.2019 14:45

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642703

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107061 Matrix: Solid Date Prep: 11.11.2019

MB Sample Id: 7690080-1-BLK LCS Sample Id: 7690080-1-BKS LCSD Sample Id: 7690080-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0492	98	0.0520	104	72-125	6	25	mg/kg	11.11.2019 10:30	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0476	95	0.0485	97	75-125	2	25	mg/kg	11.11.2019 10:30	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0491	98	0.0502	100	74-125	2	25	mg/kg	11.11.2019 10:30	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0486	97	0.0485	97	75-127	0	25	mg/kg	11.11.2019 10:30	
1,1-Dichloroethane	<0.00500	0.0500	0.0488	98	0.0501	100	72-125	3	25	mg/kg	11.11.2019 10:30	
1,1-Dichloroethene	<0.00500	0.0500	0.0494	99	0.0513	103	59-172	4	25	mg/kg	11.11.2019 10:30	
1,1-Dichloropropene	<0.00500	0.0500	0.0483	97	0.0503	101	75-125	4	25	mg/kg	11.11.2019 10:30	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0486	97	0.0528	106	75-137	8	25	mg/kg	11.11.2019 10:30	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0488	98	0.0484	97	75-125	1	25	mg/kg	11.11.2019 10:30	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0494	99	0.0533	107	75-135	8	25	mg/kg	11.11.2019 10:30	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0477	95	0.0504	101	75-125	6	25	mg/kg	11.11.2019 10:30	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0511	102	0.0525	105	59-125	3	25	mg/kg	11.11.2019 10:30	
1,2-Dibromoethane	<0.00500	0.0500	0.0482	96	0.0489	98	73-125	1	25	mg/kg	11.11.2019 10:30	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0484	97	0.0509	102	75-125	5	25	mg/kg	11.11.2019 10:30	
1,2-Dichloroethane	<0.00500	0.0500	0.0460	92	0.0465	93	68-127	1	25	mg/kg	11.11.2019 10:30	
1,2-Dichloropropane	<0.00500	0.0500	0.0481	96	0.0477	95	74-125	1	25	mg/kg	11.11.2019 10:30	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0506	101	0.0549	110	70-130	8	25	mg/kg	11.11.2019 10:30	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0501	100	0.0510	102	75-125	2	25	mg/kg	11.11.2019 10:30	
1,3-Dichloropropane	<0.00500	0.0500	0.0516	103	0.0510	102	75-125	1	25	mg/kg	11.11.2019 10:30	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0489	98	0.0501	100	75-125	2	25	mg/kg	11.11.2019 10:30	
2,2-Dichloropropane	<0.00500	0.0500	0.0488	98	0.0500	100	75-125	2	25	mg/kg	11.11.2019 10:30	
2-Butanone	<0.0200	0.250	0.197	79	0.204	82	75-125	3	25	mg/kg	11.11.2019 10:30	
2-Chlorotoluene	<0.00500	0.0500	0.0492	98	0.0520	104	73-125	6	25	mg/kg	11.11.2019 10:30	
2-Hexanone	<0.0500	0.250	0.235	94	0.219	88	75-125	7	25	mg/kg	11.11.2019 10:30	
4-Chlorotoluene	<0.00500	0.0500	0.0499	100	0.0515	103	74-125	3	25	mg/kg	11.11.2019 10:30	
4-Methyl-2-Pentanone	<0.0500	0.250	0.246	98	0.233	93	60-140	5	25	mg/kg	11.11.2019 10:30	
Acetone	<0.100	0.250	0.153	61	0.156	62	50-150	2	25	mg/kg	11.11.2019 10:30	
Benzene	<0.00100	0.0500	0.0473	95	0.0484	97	66-142	2	25	mg/kg	11.11.2019 10:30	
Bromobenzene	<0.00500	0.0500	0.0497	99	0.0516	103	75-125	4	25	mg/kg	11.11.2019 10:30	
Bromochloromethane	<0.00500	0.0500	0.0476	95	0.0490	98	60-140	3	25	mg/kg	11.11.2019 10:30	
Bromodichloromethane	<0.00500	0.0500	0.0500	100	0.0507	101	75-125	1	25	mg/kg	11.11.2019 10:30	
Bromoform	<0.00500	0.0500	0.0618	124	0.0605	121	75-125	2	25	mg/kg	11.11.2019 10:30	
Bromomethane	<0.00500	0.0500	0.0389	78	0.0397	79	60-140	2	25	mg/kg	11.11.2019 10:30	
Carbon Disulfide	<0.00500	0.0500	0.0585	117	0.0596	119	60-140	2	25	mg/kg	11.11.2019 10:30	
Carbon Tetrachloride	<0.00500	0.0500	0.0492	98	0.0507	101	62-125	3	25	mg/kg	11.11.2019 10:30	
Chlorobenzene	<0.00500	0.0500	0.0478	96	0.0488	98	60-133	2	25	mg/kg	11.11.2019 10:30	
Chloroethane	<0.0100	0.0500	0.0383	77	0.0391	78	60-140	2	25	mg/kg	11.11.2019 10:30	
Chloroform	<0.00500	0.0500	0.0470	94	0.0482	96	74-125	3	25	mg/kg	11.11.2019 10:30	
Chloromethane	<0.00500	0.0500	0.0473	95	0.0508	102	60-140	7	25	mg/kg	11.11.2019 10:30	
cis-1,2-Dichloroethene	<0.00500	0.0500	0.0474	95	0.0490	98	75-125	3	25	mg/kg	11.11.2019 10:30	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0518	104	0.0507	101	74-125	2	25	mg/kg	11.11.2019 10:30	
Dibromochloromethane	<0.00500	0.0500	0.0539	108	0.0551	110	73-125	2	25	mg/kg	11.11.2019 10:30	
Dibromomethane	<0.00500	0.0500	0.0479	96	0.0471	94	69-127	2	25	mg/kg	11.11.2019 10:30	
Dichlorodifluoromethane	<0.00500	0.0500	0.0663	133	0.0659	132	65-135	1	25	mg/kg	11.11.2019 10:30	
Ethylbenzene	<0.00100	0.0500	0.0497	99	0.0500	100	75-125	1	25	mg/kg	11.11.2019 10:30	
Hexachlorobutadiene	<0.00500	0.0500	0.0502	100	0.0534	107	75-125	6	25	mg/kg	11.11.2019 10:30	
Iodomethane (Methyl Iodide)	<0.0200	0.0500	0.0408	82	0.0417	83	75-125	2	25	mg/kg	11.11.2019 10:30	
Isopropylbenzene	<0.00500	0.0500	0.0519	104	0.0547	109	75-125	5	25	mg/kg	11.11.2019 10:30	
m,p-Xylenes	<0.00200	0.100	0.101	101	0.102	102	75-125	1	25	mg/kg	11.11.2019 10:30	
Methylene Chloride	<0.0200	0.0500	0.0513	103	0.0529	106	75-125	3	25	mg/kg	11.11.2019 10:30	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 642703

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107061 Matrix: Solid Date Prep: 11.11.2019

MB Sample Id: 7690080-1-BLK LCS Sample Id: 7690080-1-BKS LCSD Sample Id: 7690080-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
MTBE	<0.00500	0.0500	0.0482	96	0.0495	99	60-140	3	25	mg/kg	11.11.2019 10:30	
Naphthalene	<0.0100	0.0500	0.0518	104	0.0562	112	70-130	8	25	mg/kg	11.11.2019 10:30	
n-Butylbenzene	<0.00500	0.0500	0.0492	98	0.0521	104	75-125	6	25	mg/kg	11.11.2019 10:30	
n-Propylbenzene	<0.00500	0.0500	0.0504	101	0.0524	105	75-125	4	25	mg/kg	11.11.2019 10:30	
o-Xylene	<0.00100	0.0500	0.0518	104	0.0537	107	75-125	4	25	mg/kg	11.11.2019 10:30	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0468	94	0.0502	100	75-125	7	25	mg/kg	11.11.2019 10:30	
Sec-Butylbenzene	<0.00500	0.0500	0.0480	96	0.0519	104	75-125	8	25	mg/kg	11.11.2019 10:30	
Styrene	<0.00500	0.0500	0.0515	103	0.0520	104	75-125	1	25	mg/kg	11.11.2019 10:30	
tert-Butylbenzene	<0.00500	0.0500	0.0533	107	0.0583	117	75-125	9	25	mg/kg	11.11.2019 10:30	
Tetrachloroethylene	<0.00500	0.0500	0.0488	98	0.0494	99	71-125	1	25	mg/kg	11.11.2019 10:30	
Toluene	<0.00500	0.0500	0.0478	96	0.0484	97	59-139	1	25	mg/kg	11.11.2019 10:30	
trans-1,2-dichloroethene	<0.00500	0.0500	0.0476	95	0.0494	99	75-125	4	25	mg/kg	11.11.2019 10:30	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0510	102	0.0516	103	66-125	1	25	mg/kg	11.11.2019 10:30	
Trichloroethene	<0.00500	0.0500	0.0435	87	0.0442	88	62-137	2	25	mg/kg	11.11.2019 10:30	
Trichlorofluoromethane	<0.00500	0.0500	0.0433	87	0.0434	87	67-125	0	25	mg/kg	11.11.2019 10:30	
Vinyl Acetate	<0.0100	0.250	0.199	80	0.201	80	60-140	1	25	mg/kg	11.11.2019 10:30	
Vinyl Chloride	<0.00500	0.0500	0.0461	92	0.0494	99	60-140	7	25	mg/kg	11.11.2019 10:30	
1,3-Butadiene	<0.00500	0.0500	0.0517	103	0.0551	110	70-130	6	25	mg/kg	11.11.2019 10:30	
Cyclohexane	<0.00500	0.0500	0.0434	87	0.0451	90	70-130	4	25	mg/kg	11.11.2019 10:30	
Dicyclopentadiene	<0.00500	0.0500	0.0418	84	0.0457	91	70-120	9	25	mg/kg	11.11.2019 10:30	
Methylcyclohexane	<0.0100	0.0500	0.0465	93	0.0478	96	65-135	3	25	mg/kg	11.11.2019 10:30	
n-Hexane	<0.0100	0.0500	0.0431	86	0.0432	86	72-125	0	25	mg/kg	11.11.2019 10:30	
4-Ethyltoluene	<0.00500	0.0500	0.0485	97	0.0505	101	70-130	4	25	mg/kg	11.11.2019 10:30	
Propene	<0.00500	0.0500	0.0423	85	0.0429	86	70-130	1	25	mg/kg	11.11.2019 10:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	105		98		100		53-142	%	11.11.2019 10:30
1,2-Dichloroethane-D4	99		96		97		56-150	%	11.11.2019 10:30
Toluene-D8	101		100		102		70-130	%	11.11.2019 10:30
4-Bromofluorobenzene	97		99		100		68-152	%	11.11.2019 10:30

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107061 Matrix: Soil Date Prep: 11.11.2019

Parent Sample Id: 642676-001 MS Sample Id: 642676-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
1,1,1,2-Tetrachloroethane	<0.00454	0.0454	0.0367	81	72-125	mg/kg	11.11.2019 11:37	
1,1,1-Trichloroethane	<0.00454	0.0454	0.0391	86	75-125	mg/kg	11.11.2019 11:37	
1,1,2,2-Tetrachloroethane	<0.00454	0.0454	0.0353	78	74-125	mg/kg	11.11.2019 11:37	
1,1,2-Trichloroethane	<0.00454	0.0454	0.0324	71	75-127	mg/kg	11.11.2019 11:37	X
1,1-Dichloroethane	<0.00454	0.0454	0.0379	83	72-125	mg/kg	11.11.2019 11:37	
1,1-Dichloroethene	<0.00454	0.0454	0.0425	94	59-172	mg/kg	11.11.2019 11:37	
1,1-Dichloropropene	<0.00454	0.0454	0.0364	80	75-125	mg/kg	11.11.2019 11:37	
1,2,3-Trichlorobenzene	<0.00454	0.0454	0.0192	42	75-137	mg/kg	11.11.2019 11:37	X
1,2,3-Trichloropropane	<0.00454	0.0454	0.0341	75	75-125	mg/kg	11.11.2019 11:37	
1,2,4-Trichlorobenzene	<0.00454	0.0454	0.0206	45	75-135	mg/kg	11.11.2019 11:37	X
1,2,4-Trimethylbenzene	<0.000231	0.0454	0.0331	73	75-125	mg/kg	11.11.2019 11:37	X
1,2-Dibromo-3-Chloropropane	<0.00454	0.0454	0.0342	75	59-125	mg/kg	11.11.2019 11:37	
1,2-Dibromoethane	<0.00454	0.0454	0.0316	70	73-125	mg/kg	11.11.2019 11:37	X
1,2-Dichlorobenzene	<0.00454	0.0454	0.0295	65	75-125	mg/kg	11.11.2019 11:37	X
1,2-Dichloroethane	<0.00454	0.0454	0.0311	69	68-127	mg/kg	11.11.2019 11:37	
1,2-Dichloropropane	<0.00454	0.0454	0.0332	73	74-125	mg/kg	11.11.2019 11:37	X
1,3,5-Trimethylbenzene	<0.00454	0.0454	0.0368	81	70-130	mg/kg	11.11.2019 11:37	
1,3-Dichlorobenzene	<0.00454	0.0454	0.0300	66	75-125	mg/kg	11.11.2019 11:37	X
1,3-Dichloropropane	<0.00454	0.0454	0.0330	73	75-125	mg/kg	11.11.2019 11:37	X
1,4-Dichlorobenzene	<0.00454	0.0454	0.0290	64	75-125	mg/kg	11.11.2019 11:37	X
2,2-Dichloropropane	<0.00454	0.0454	0.0419	92	75-125	mg/kg	11.11.2019 11:37	
2-Butanone	0.0260	0.227	0.138	49	75-125	mg/kg	11.11.2019 11:37	X
2-Chlorotoluene	<0.00454	0.0454	0.0351	77	73-125	mg/kg	11.11.2019 11:37	
2-Hexanone	<0.0454	0.227	0.140	62	75-125	mg/kg	11.11.2019 11:37	X
4-Chlorotoluene	<0.00454	0.0454	0.0334	74	74-125	mg/kg	11.11.2019 11:37	
4-Methyl-2-Pentanone	<0.0454	0.227	0.149	66	60-140	mg/kg	11.11.2019 11:37	
Acetone	0.125	0.227	0.159	15	50-150	mg/kg	11.11.2019 11:37	X
Benzene	0.000240	0.0454	0.0350	77	66-142	mg/kg	11.11.2019 11:37	
Bromobenzene	<0.00454	0.0454	0.0338	74	75-125	mg/kg	11.11.2019 11:37	X
Bromochloromethane	<0.00454	0.0454	0.0342	75	60-140	mg/kg	11.11.2019 11:37	
Bromodichloromethane	<0.00454	0.0454	0.0336	74	75-125	mg/kg	11.11.2019 11:37	X
Bromoform	<0.00454	0.0454	0.0378	83	75-125	mg/kg	11.11.2019 11:37	
Bromomethane	<0.00454	0.0454	0.0350	77	60-140	mg/kg	11.11.2019 11:37	
Carbon Disulfide	0.000560	0.0454	0.0509	111	60-140	mg/kg	11.11.2019 11:37	
Carbon Tetrachloride	<0.00454	0.0454	0.0397	87	62-125	mg/kg	11.11.2019 11:37	
Chlorobenzene	<0.00454	0.0454	0.0320	70	60-133	mg/kg	11.11.2019 11:37	
Chloroethane	<0.00908	0.0454	0.0321	71	60-140	mg/kg	11.11.2019 11:37	
Chloroform	<0.00454	0.0454	0.0353	78	74-125	mg/kg	11.11.2019 11:37	
Chloromethane	<0.00454	0.0454	0.0396	87	60-140	mg/kg	11.11.2019 11:37	
cis-1,2-Dichloroethene	<0.00454	0.0454	0.0356	78	75-125	mg/kg	11.11.2019 11:37	
cis-1,3-Dichloropropene	<0.00454	0.0454	0.0321	71	74-125	mg/kg	11.11.2019 11:37	X
Dibromochloromethane	<0.00454	0.0454	0.0358	79	73-125	mg/kg	11.11.2019 11:37	
Dibromomethane	<0.00454	0.0454	0.0320	70	69-127	mg/kg	11.11.2019 11:37	
Dichlorodifluoromethane	<0.00454	0.0454	0.0517	114	65-135	mg/kg	11.11.2019 11:37	
Ethylbenzene	0.000708	0.0454	0.0354	76	75-125	mg/kg	11.11.2019 11:37	
Hexachlorobutadiene	<0.00454	0.0454	0.0183	40	75-125	mg/kg	11.11.2019 11:37	X
Iodomethane (Methyl Iodide)	<0.0182	0.0454	0.0338	74	75-125	mg/kg	11.11.2019 11:37	X
Isopropylbenzene	<0.00454	0.0454	0.0367	81	75-125	mg/kg	11.11.2019 11:37	
m,p-Xylenes	<0.000396	0.0908	0.0693	76	75-125	mg/kg	11.11.2019 11:37	
Methylene Chloride	0.00493	0.0454	0.0429	84	75-125	mg/kg	11.11.2019 11:37	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

APS

APS MGP Douglas, AZ

Analytical Method: **Volatiles by SW 8260C** Prep Method: SW5035A

Seq Number: 3107061 Matrix: Soil Date Prep: 11.11.2019

Parent Sample Id: 642676-001 MS Sample Id: 642676-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
MTBE	<0.000371	0.0454	0.0350	77	60-140	mg/kg	11.11.2019 11:37	
Naphthalene	<0.00908	0.0454	0.0240	53	70-130	mg/kg	11.11.2019 11:37	X
n-Butylbenzene	<0.00454	0.0454	0.0285	63	75-125	mg/kg	11.11.2019 11:37	X
n-Propylbenzene	<0.00454	0.0454	0.0356	78	75-125	mg/kg	11.11.2019 11:37	
o-Xylene	<0.000908	0.0454	0.0367	81	75-125	mg/kg	11.11.2019 11:37	
p-Cymene (p-Isopropyltoluene)	0.000308	0.0454	0.0305	67	75-125	mg/kg	11.11.2019 11:37	X
Sec-Butylbenzene	<0.00454	0.0454	0.0314	69	75-125	mg/kg	11.11.2019 11:37	X
Styrene	<0.00454	0.0454	0.0325	72	75-125	mg/kg	11.11.2019 11:37	X
tert-Butylbenzene	<0.00454	0.0454	0.0366	81	75-125	mg/kg	11.11.2019 11:37	
Tetrachloroethylene	<0.00454	0.0454	0.0347	76	71-125	mg/kg	11.11.2019 11:37	
Toluene	<0.000908	0.0454	0.0351	77	59-139	mg/kg	11.11.2019 11:37	
trans-1,2-dichloroethene	<0.00454	0.0454	0.0389	86	75-125	mg/kg	11.11.2019 11:37	
trans-1,3-dichloropropene	<0.00454	0.0454	0.0324	71	66-125	mg/kg	11.11.2019 11:37	
Trichloroethene	<0.00454	0.0454	0.0309	68	62-137	mg/kg	11.11.2019 11:37	
Trichlorofluoromethane	<0.00454	0.0454	0.0353	78	67-125	mg/kg	11.11.2019 11:37	
Vinyl Acetate	<0.00908	0.227	0.0790	35	60-140	mg/kg	11.11.2019 11:37	X
Vinyl Chloride	<0.00454	0.0454	0.0410	90	60-140	mg/kg	11.11.2019 11:37	
1,3-Butadiene	<0.00454	0.0454	0.0457	101	70-130	mg/kg	11.11.2019 11:37	
Cyclohexane	<0.00454	0.0454	0.0341	75	70-130	mg/kg	11.11.2019 11:37	
Dicyclopentadiene	<0.00454	0.0454	0.0295	65	70-120	mg/kg	11.11.2019 11:37	X
Methylcyclohexane	<0.00908	0.0454	0.0311	69	65-135	mg/kg	11.11.2019 11:37	
n-Hexane	<0.00908	0.0454	0.0268	59	72-125	mg/kg	11.11.2019 11:37	X
4-Ethyltoluene	<0.00454	0.0454	0.0343	76	70-130	mg/kg	11.11.2019 11:37	
Propene	0.00296	0.0454	0.0376	76	70-130	mg/kg	11.11.2019 11:37	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
Dibromofluoromethane	102		53-142	%	11.11.2019 11:37
1,2-Dichloroethane-D4	101		56-150	%	11.11.2019 11:37
Toluene-D8	103		70-130	%	11.11.2019 11:37
4-Bromofluorobenzene	104		68-152	%	11.11.2019 11:37

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Chain of Custody

Work Order No: 642703

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Judy Heywood	Send results to	Bernice Kidd Matt Branche
Company Name:	APS	Company Name:	Jacobs
Address:	PO Box53999, MS 9303	Phone	480-273-4084
City, State ZIP:	Phoenix, AZ 85072-3999	email	Bernice.Kidd@jacobs.com matt.branche@jacobs.com
Phone:	602-818-0259 Email:	Judith.Heywood@aps.com	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfur ☐
State of Project: Arizona
Reporting:Level II [X] Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	APS MGP Douglas, AZ	Turn Around	
Project Number:	D3118600.A.CS.EV.DG.05-1B	Routine [X]	
P.O. Number:	700735632	Rush:	
Sampler's Name:		Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	2.8	Thermometer ID	
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	8270 SIM PAHs	6010B/7471A - Total metals (8 RCRA)	8260B - Total VOCs (MeOH preserved)	8082 - PCBs	9095B - Paint Filter	SW846 Article 7.12 - Ignitability	9045B - pH	9013/9014 - Total Cyanide
D-BIN-110719	S	11-7-19	1030	—	4	X	X	X	X	X	X	X	X
D-TB02-110719	S	11-7-19	1000	—	1			X					
	S												
	S												
	S												
	S												
	S												
	S												

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11-8-19: 1440	2		
3			4		
5			6		

Inter-Office Shipment

IOS Number : 51909

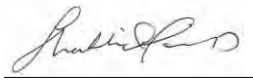
Date/Time:	11.08.2019	Created by:	Emily Petrunia	Please send report to:	Ruriko Konuma
Lab# From:	**Phoenix**	Delivery Priority:		Address:	2525 West Huntington Drive, Suite 102
Lab# To:	**Houston**	Air Bill No.:	776943469016	E-Mail:	ruriko.konuma@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
642703-001	S	D-BIN-110719	11.07.2019 10:30	SW8082A	PCBs by SW-846 8082A	11.14.2019	11.21.2019	RKO	PCB1016 PCB1221 PCB1	
642703-001	S	D-BIN-110719	11.07.2019 10:30	SIM_PAH_D	PAHs by 8270D SIM	11.14.2019	11.21.2019	RKO	ACNP ACNPY ANTH BZ	
642703-001	S	D-BIN-110719	11.07.2019 10:30	SW8260C_AZ	Volatiles by SW 8260C	11.14.2019	11.21.2019	RKO	ACE BDCME BRBZ BR(	
642703-001	S	D-BIN-110719	11.07.2019 10:30	SW9012B_Total	Total Cyanide by SW 9012	11.14.2019	11.21.2019	RKO	CN	
642703-001	S	D-BIN-110719	11.07.2019 10:30	SW6020RCRA	Metals, RCRA List, by SW 6020	11.14.2019	05.05.2020	RKO	AG AS BA CD CR PB SE	
642703-001	S	D-BIN-110719	11.07.2019 10:30	SW7471B	Mercury by SW 7471B	11.14.2019	12.05.2019	RKO	HG	
642703-001	S	D-BIN-110719	11.07.2019 10:30	SW9045C	Soil pH by SW-846 9045C	11.14.2019	12.05.2019	RKO		
642703-002	S	D-TB02-110719	11.07.2019 10:00	SW8260C_AZ	Volatiles by SW 8260C	11.14.2019	11.21.2019	RKO	ACE BDCME BRBZ BR(	

Inter Office Shipment or Sample Comments:

Relinquished By:
Emily Petrunia

Date Relinquished: 11.08.2019

Received By: 
Monica Shakhshir

Date Received: 11.09.2019

Cooler Temperature: 1.8

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 51909

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Emily Petrunia **Date Sent:** 11.08.2019 05.51 PM

Received By: Monica Shakhshir **Date Received:** 11.09.2019 10.00 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 11.09.2019
Monica Shakhshir

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APS

Date/ Time Received: 11/08/2019 02:40:00 PM

Work Order #: 642703

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR#1

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Xenco Stafford
#18 Water VOC samples have zero headspace?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Emily Petrunia Date: 11/08/2019

Checklist reviewed by: Ruriko Konuma Date: 11/08/2019

Appendix H
Pre-design Testing Investigation Data Evaluation

Arizona Public Service
Former Manufactured Gas Plant, Douglas Site
Soil and Groundwater Sampling 2019
Data Quality Evaluation Report

Introduction

The objective of this data quality evaluation (DQE) report is to assess the data quality of analytical results for soil and groundwater samples collected at the Arizona Public Service Former Manufactured Gas Plant, Douglas Site as part of a site investigation. Individual method requirements and guidelines from the Arizona Public Service Quality Assurance Project Plan (QAPP) (Jacobs, 2019) were used in this assessment.

This report is intended as a general data quality assessment designed to summarize data issues.

Analytical Data

This DQE report covers 168 normal soil samples, 4 normal groundwater samples, 20 soil field duplicates (FD), one groundwater FD, 2 equipment blanks (EB), and 6 trip blanks (TB). Samples were collected between October 27 and November 7, 2019. A list of sample identifications and collection dates is included in Attachment A at the end of this report.

The analyses were performed by Xenco Laboratories in Tempe, AZ. Samples were collected and delivered by courier to the laboratory for analysis. The sample results were reported in seven sample delivery groups (SDGs): 641446, 641801, 641882, 642000, 642303, 642585, and 642698.

Selected samples were analyzed for one or more of the following analytes and methods presented in Table 1.

Table 1. Analytical Parameters

Method	Parameter
SW6010C	TCLP Metals
SW6020/E200.8	Metals
SW7470A/SW7471B	Mercury and TCLP Mercury
SW8082	Polychlorinated biphenyls
SW8260C	Volatile organic compounds
SW8270D/SW8270D-SIM	Polynuclear aromatic hydrocarbons
SW1010	Ignitability
SW9012	Cyanide
SW9045D	pH
SW9095	Free liquids

The assessment of data includes a review of: (1) the chain-of-custody (CoC) documentation; (2) holding-time compliance; (3) the required field and laboratory quality control (QC) samples; (4) method blanks;

(5) laboratory control samples and laboratory control sample duplicates (LCS/LCSDs); (6) surrogate spike recoveries for organic analyses; and, (7) matrix spikes and matrix spike duplicate samples (MS/MSDs).

Field samples were also reviewed to ascertain field compliance and data quality issues. This included a review of FDs, EBs, and TBs.

Data flags are assigned according to the QAPP. These flags, as well as the reason for each flag, are entered into an electronic database. Multiple flags are routinely applied to specific sample method, matrix, and analyte combinations, but there will be only one final flag. A final flag is applied to the data and is the most conservative of the applied validation flags. The final flag also includes blank sample impacts.

The data flags are defined as follows:

- J = Analyte was present, but the reported value may not be accurate or precise (estimated). The result was estimated due to either being less than the referenced reporting limit but greater than the method detection limit or due to a QC exceedance.
- R = The result was unusable due to deficiencies in the ability to analyze the sample and meet QC criteria.
- U = Analyte was not detected at the specified detection limit.
- UJ = Analyte was not detected, and the specified detection limit may not be accurate or precise (estimated).

Findings

The overall summaries of the data validation findings are contained in the following sections and summarized in Attachment B at the end of this DQE report.

Holding Times

All holding-time criteria were met.

Calibration

Initial and continuing calibration data were not supplied in the data packages and were not part of the routine validation performed. The laboratory did not report any criteria exceedances in the case narratives.

Method Blanks

Method blanks were analyzed at the required frequency and were free of contamination that would affect the sample results.

Field Blanks

Two EBs and six TBs were collected at the required frequency and were free of contamination that would affect the sample results.

Matrix Spike Samples

The results of MS/MSD analyses provide information about the possible influence of the matrix on either accuracy or precision of the measurements. MS/MSD recoveries and the associated RPDs met criteria with the following exceptions:

- The recoveries of arsenic, barium, chromium and lead were greater than the upper control limits in the MSs and /or MSDs of six soil samples for Method SW6020, indicating the associated

parent sample results are possibly biased high. Eleven associated detected results were qualified as estimated and flagged "J".

- The recoveries of lead and silver were less than the lower control limit in the MSs and MSDs of three soil samples for Method SW6020, indicating the associated parent sample results are possibly biased low. Two associated nondetected results were qualified as estimated and flagged "UJ"; one associated detected result was qualified as estimated and flagged "J".
- The recovery of cyanide was less than the lower control limit in the MSs and MSDs of two soil samples for Method SW9012, indicating the associated parent sample results are possibly biased low. One associated nondetected result was qualified as estimated and flagged "UJ"; one associated detected result was qualified as estimated and flagged "J".
- The recovery of acetone was less than the lower control limit in the MS of one groundwater sample for Method SW8260C, indicating the associated parent sample result is possibly biased low. One associated nondetected result was qualified as estimated and flagged "UJ".
- The recoveries of 2-butanone, bromomethane, chloroethane, bromoform, 1,1,1-trichloroethane, acetone, cyclohexane, iodomethane, n-hexane, propene and trichlorofluoromethane were less than the lower control limits in the MSs and/or MSDs of three soil samples for Method SW8260C, indicating the associated parent sample results are possibly biased low. Sixteen associated nondetected results were qualified as estimated and flagged "UJ".
- The recoveries of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene and pyrene were less than the lower control limits in the MSs and/or MSDs of two soil samples for Method SW8270D-SIM, indicating the associated parent sample results are possibly biased low. Seventeen associated detected results were qualified as estimated and flagged "J".
- The recoveries of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene and pyrene were greater than the upper control limits in the MSs and/or MSDs of six soil samples for Method SW8270D-SIM, indicating the associated parent sample results are possibly biased high. Twenty-three associated detected results were qualified as estimated and flagged "J".
- The relative percent differences (RPD) of acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene and pyrene were greater than the control limit in the MS/MSD sets of four soil samples for Method SW8270D-SIM, indicating associated sample results are possibly biased. Nineteen associated detected results were qualified as estimated and flagged "J".

Field Duplicates

Twenty-one FD sets were collected and analyzed with this event. A list of the FD and associated parent sample identifications (IDs) is included in Table 2.

Table 2. List of Field Duplicates

Associated Parent Sample ID	Field Duplicate Sample ID
D-B12-5.0-5.5	D-FD02-103119
D-B13-15.0-15.5	D-FD01-103119
D-B15-10.0-10.5	D-FD04-110119

Table 2. List of Field Duplicates

Associated Parent Sample ID	Field Duplicate Sample ID
D-B15-5.0-5.5	D-FD03-110119
D-B16-15.0-15.5	D-FD02-102919
D-B16-2.5-3.0	D-FD01-102919
D-B18-5.0-5.5	D-FD03-102819
D-B20-0-102719	D-FD01-102719
D-B21-2.5-3.0	D-FD02-110119
D-B23-25-3.0	D-FD03-103119
D-B24-19.5-20.0	D-FD01-103019
D-B25-40.0-40.5	D-FD04-103119
D-B26-2.5-3.0	D-FD05-110119
D-B27-2.5-3.0	D-FD01-110319
D-B27-25.0-25.5	D-FD02-110319
D-B27-30.0-30.5	D-FD01-110219
D-B28-5.0-5.5	D-FD03-102919
D-B30-5.0-5.5	D-FD01-110119
D-B32-5.0-5.5	B-FD02-102819
D-B34-0-102719	D-FD01-102819
D-MW27	D-FD01-110719

All precision criteria were met with the following exceptions:

- The RPDs of 15 analytes were greater than the acceptance criterion in FD set D-B12-5.0-5.5/D-FD02-103119 for Method SW8270D-SIM. Twenty-seven detected results were qualified as estimated and flagged "J"; three nondetected results were qualified as estimated and flagged "UJ".
- The RPDs of 13 analytes were greater than the acceptance criterion in FD set D-B13-15.0-15.5/D-FD01-103119 for Method SW8270D-SIM. Twenty-six detected results were qualified as estimated and flagged "J".
- The RPDs of 13 analytes were greater than the acceptance criterion in FD set D-B16-15.0-15.5/D-FD02-102919 for Method SW8270D-SIM. Twenty-five detected results were qualified as estimated and flagged "J"; one nondetected result was qualified as estimated and flagged "UJ".
- The RPDs of two analytes were greater than the acceptance criterion in FD set D-B23-25-3.0/D-FD03-103119 for Method SW8270D-SIM. Four detected results were qualified as estimated and flagged "J".
- The RPDs of 15 analytes were greater than the acceptance criterion in FD set D-B24-19.5-20.0/D-FD01-103019 for Method SW8270D-SIM. Twenty-seven detected results were qualified as estimated and flagged "J"; three nondetected results were qualified as estimated and flagged "UJ".

- The RPD of barium was greater than the acceptance criterion in FD set D-B27-2.5-3.0/D-FD01-110319 for Method SW6020. Two detected results were qualified as estimated and flagged "J".
- The RPDs of 10 analytes were greater than the acceptance criterion in FD set D-B28-5.0-5.5/D-FD03-102919 for Method SW8270D-SIM. Nineteen detected results were qualified as estimated and flagged "J"; one nondetected result was qualified as estimated and flagged "UJ".
- The RPDs of 10 analytes were greater than the acceptance criterion in FD set D-B32-5.0-5.5/B-FD02-102819 for Method SW8270D-SIM. Twenty detected results were qualified as estimated and flagged "J".
- The RPDs of 10 analytes were greater than the acceptance criterion in FD set D-B34-0-102719/D-FD01-102819 for Method SW8270D-SIM. Sixteen detected results were qualified as estimated and flagged "J"; four nondetected results were qualified as estimated and flagged "UJ".
- The RPDs of 11 analytes were greater than the acceptance criterion in FD set D-B18-5.0-5.5/D-FD03-102819 for Method SW8270D-SIM. Twenty-two detected results were qualified as estimated and flagged "J".
- The RPDs of two analytes were greater than the acceptance criterion in FD set D-B16-2.5-3.0/D-FD01-102919 for Method SW8270D-SIM. Three detected results were qualified as estimated and flagged "J"; one nondetected result was qualified as estimated and flagged "UJ".
- The RPD of lead was greater than the acceptance criterion in FD set D-B30-5.0-5.5/D-FD01-110119 for Method SW6020. Two detected results were qualified as estimated and flagged "J".
- The RPD of chromium was greater than the acceptance criterion in FD set D-B32-5.0-5.5/B-FD02-102819 for Method SW6020. Two detected results were qualified as estimated and flagged "J".
- The RPDs of arsenic, lead and chromium were greater than the acceptance criterion in FD set D-B18-5.0-5.5/D-FD03-102819 for Method SW6020. Six detected results were qualified as estimated and flagged "J".
- The RPDs of barium and lead were greater than the acceptance criterion in FD set D-B34-0-102719/D-FD01-102819 for Method SW6020. Four detected results were qualified as estimated and flagged "J".
- The RPD of naphthalene was greater than the acceptance criterion in FD set D-B20-0-102719/ D-FD01-102719 for Method SW8270D-SIM. One detected result was qualified as estimated and flagged "J"; one nondetected result was qualified as estimated and flagged "UJ".
- The RPD of mercury was greater than the acceptance criterion in FD sets D-B30-5.0-5.5/D-FD01-110119, D-B18-5.0-5.5 D-FD03-102819, D-B34-0-102719/ D-FD01-102819 and D-B32-5.0-5.5/B-FD02-102819 for Method SW7471B. Four detected results were qualified as estimated and flagged "J"; four nondetected results were qualified as estimated and flagged "UJ".

Surrogates

Surrogate spikes were analyzed in each sample as required. All acceptance criteria were met with the following exception:

- Surrogate recovery was greater than the upper control limit in soil samples D-B12-7.5-8.0, D-B13-1.0-1.5, D-B29-10.0-10.5, D-B29-15.0-15.5, D-B34-5.0-5.5-102819 and D-B29-20.0-20.5 for Method SW8270D-SIM, indicating associated sample results are possibly biased high. Sixty-six associated detected results were qualified as estimated and flagged "J".

Internal Standards

Internal standard data were not supplied in the data packages and were not part of the routine validation performed. The laboratory did not report any criteria exceedances in the case narratives.

Laboratory Control Samples

LCS/LCSDs were analyzed for all methods as required and all accuracy and precision criteria were met with the following exceptions:

- The recoveries of iodomethane, n-hexane and propene were less than criteria in a LCS for Method SW8260C, indicating associated sample results are possibly biased low. Three associated nondetected results were qualified as estimated and flagged "UJ".
- The recovery of mercury was less than criteria in a LCS for Method SW7471B, indicating associated sample results are possibly biased low. Ten associated nondetected results were qualified as estimated and flagged "UJ"; one associated detected result was qualified as estimated and flagged "J".

Miscellaneous

The cyclohexane results in the groundwater samples were noted by the laboratory as having interference. The four associated nondetected results were qualified as estimated and flagged "UJ".

Chain of Custody and Sample Receipt

Each sample was documented in a completed CoC form. All samples were received at the laboratory within temperature criteria and properly preserved.

Overall Assessment

The final activity in the DQE is an assessment of whether the data meet the data quality objectives (DQOs). The goal of this assessment is to demonstrate that a sufficient number of representative samples was collected and the resulting analytical data can be used to support the decision-making process. The following summary highlights the data evaluation findings for the events defined herein:

1. The precision and accuracy of the data, as measured by laboratory QC indicators, suggest that the QAPP goals have been met.
2. No data were rejected. Completeness was 100 percent for all method/matrix/analyte combinations.
3. No data were qualified due to associated laboratory, EB or TB contamination.
4. Approximately 5 percent of the data were qualified due to QC exceedances. These exceedances include the following: FD RPD exceedances, LCS recovery exceedances, MS/MSD recovery and RPD exceedances, surrogate recovery exceedances, and matrix interference.
5. The field crews and laboratory followed QAPP and project documents, thereby assuring representativeness and comparability with previous studies.

ATTACHMENT A

Samples Associated with Data Quality Evaluation

Sample ID	Sample Date	Sample Purpose	Matrix
D-EB01-102919	29-Oct-19	EB	WATER
D-EB01-110219	02-Nov-19	EB	WATER
B-FD02-102819	28-Oct-19	FD	SOIL
D-FD01-102719	27-Oct-19	FD	SOIL
D-FD01-102819	28-Oct-19	FD	SOIL
D-FD01-102919	29-Oct-19	FD	SOIL
D-FD03-102819	28-Oct-19	FD	SOIL
D-FD01-103019	30-Oct-19	FD	SOIL
D-FD01-103119	31-Oct-19	FD	SOIL
D-FD01-110119	01-Nov-19	FD	SOIL
D-FD01-110219	02-Nov-19	FD	SOIL
D-FD01-110319	03-Nov-19	FD	SOIL
D-FD01-110719	07-Nov-19	FD	WATER
D-FD02-102919	29-Oct-19	FD	SOIL
D-FD02-103119	31-Oct-19	FD	SOIL
D-FD02-110119	01-Nov-19	FD	SOIL
D-FD02-110319	03-Nov-19	FD	SOIL
D-FD03-102919	29-Oct-19	FD	SOIL
D-FD03-103119	31-Oct-19	FD	SOIL
D-FD03-110119	01-Nov-19	FD	SOIL
D-FD04-103119	31-Oct-19	FD	SOIL
D-FD04-110119	01-Nov-19	FD	SOIL
D-FD05-110119	01-Nov-19	FD	SOIL
D-B11-1.0-1.5	30-Oct-19	N	SOIL
D-B14-1.0-1.5	29-Oct-19	N	SOIL
D-B14-2.5-3.0	29-Oct-19	N	SOIL
D-B14-5.0-5.5	29-Oct-19	N	SOIL
D-B16-0-102719	27-Oct-19	N	SOIL
D-B16-2.5-3.0	29-Oct-19	N	SOIL

Sample ID	Sample Date	Sample Purpose	Matrix
D-B16-5.0-5.5	29-Oct-19	N	SOIL
D-B17-0-102719	27-Oct-19	N	SOIL
D-B18-0-102719	27-Oct-19	N	SOIL
D-B18-2.0-2.5	28-Oct-19	N	SOIL
D-B18-5.0-5.5	28-Oct-19	N	SOIL
D-B18-7.0-7.5	28-Oct-19	N	SOIL
D-B19-0-102719	27-Oct-19	N	SOIL
D-B20-0-102719	27-Oct-19	N	SOIL
D-B21-0-102719	27-Oct-19	N	SOIL
D-B22-0-102719	27-Oct-19	N	SOIL
D-B22-2.5-3.0	29-Oct-19	N	SOIL
D-B23-0-102719	27-Oct-19	N	SOIL
D-B24-0-102719	28-Oct-19	N	SOIL
D-B25-0-102719	27-Oct-19	N	SOIL
D-B26-0-102719	28-Oct-19	N	SOIL
D-B27-0-102719	27-Oct-19	N	SOIL
D-B28-0-102719	27-Oct-19	N	SOIL
D-B29-0-102719	27-Oct-19	N	SOIL
D-B30-0-102719	28-Oct-19	N	SOIL
D-B31-0-102719	27-Oct-19	N	SOIL
D-B31-5.0-5.5	28-Oct-19	N	SOIL
D-B32-0-102719	27-Oct-19	N	SOIL
D-B32-5.0-5.5	28-Oct-19	N	SOIL
D-B33-0-102719	27-Oct-19	N	SOIL
D-B33-5.0-5.5	28-Oct-19	N	SOIL
D-B34-0-102719	27-Oct-19	N	SOIL
D-B34-5.0-5.5-102819	28-Oct-19	N	SOIL
D-B35-0-102719	27-Oct-19	N	SOIL
D-B35-5.0-5.5	28-Oct-19	N	SOIL
D-B11-10.0-10.5	30-Oct-19	N	SOIL
D-B11-15.0-15.5	30-Oct-19	N	SOIL
D-B11-19.5-20.0	30-Oct-19	N	SOIL

Sample ID	Sample Date	Sample Purpose	Matrix
D-B11-2.5-3.0	30-Oct-19	N	SOIL
D-B11-5.0-5.5	30-Oct-19	N	SOIL
D-B11-7.5-8.0	30-Oct-19	N	SOIL
D-B12-1.0-1.5	31-Oct-19	N	SOIL
D-B12-10.0-10.5	31-Oct-19	N	SOIL
D-B12-15.0-15.5	31-Oct-19	N	SOIL
D-B12-19.5-20	31-Oct-19	N	SOIL
D-B12-2.5-3.0	31-Oct-19	N	SOIL
D-B12-24.5-25.0	31-Oct-19	N	SOIL
D-B12-5.0-5.5	31-Oct-19	N	SOIL
D-B12-7.5-8.0	31-Oct-19	N	SOIL
D-B13-1.0-1.5	31-Oct-19	N	SOIL
D-B13-10.0-10.5	31-Oct-19	N	SOIL
D-B13-15.0-15.5	31-Oct-19	N	SOIL
D-B13-19.5-20.0	31-Oct-19	N	SOIL
D-B13-2.5-3.0	31-Oct-19	N	SOIL
D-B13-5.0-5.5	31-Oct-19	N	SOIL
D-B13-7.5-8.0	31-Oct-19	N	SOIL
D-B14-10.0-10.5	29-Oct-19	N	SOIL
D-B14-15.0-15.5	29-Oct-19	N	SOIL
D-B14-19.5-20.0	29-Oct-19	N	SOIL
D-B14-7.5-8.0	29-Oct-19	N	SOIL
D-B15-1.0-1.5	01-Nov-19	N	SOIL
D-B15-10.0-10.5	01-Nov-19	N	SOIL
D-B15-14.5-15.0	01-Nov-19	N	SOIL
D-B15-2.5-3.0	01-Nov-19	N	SOIL
D-B15-5.0-5.5	01-Nov-19	N	SOIL
D-B15-7.5-8.0	01-Nov-19	N	SOIL
D-B16-10.0-10.5	29-Oct-19	N	SOIL
D-B16-15.0-15.5	29-Oct-19	N	SOIL
D-B16-19.5-20.0	29-Oct-19	N	SOIL
D-B16-7.5-8.0	29-Oct-19	N	SOIL

Sample ID	Sample Date	Sample Purpose	Matrix
D-B17-10.0-10.5	30-Oct-19	N	SOIL
D-B17-15.0-15.5	30-Oct-19	N	SOIL
D-B17-19.5-20.0	30-Oct-19	N	SOIL
D-B17-2.5-3.0	30-Oct-19	N	SOIL
D-B17-5.0-5.5	30-Oct-19	N	SOIL
D-B17-7.5-8.0	30-Oct-19	N	SOIL
D-B18-10.0-10.5	05-Nov-19	N	SOIL
D-B18-15.0-15.5	05-Nov-19	N	SOIL
D-B19-10.0-10.5	02-Nov-19	N	SOIL
D-B19-15.0-15.5	02-Nov-19	N	SOIL
D-B19-19.5-20.0	02-Nov-19	N	SOIL
D-B19-2.5-3.0	01-Nov-19	N	SOIL
D-B19-5.0-5.5	01-Nov-19	N	SOIL
D-B19-7.5-8.0	01-Nov-19	N	SOIL
D-B20-14.5-15.0	02-Nov-19	N	SOIL
D-B20-19.5-20.0	02-Nov-19	N	SOIL
D-B20-2.5-3.0	30-Oct-19	N	SOIL
D-B20-5.0-5.5	30-Oct-19	N	SOIL
D-B20-7.5-8.0	02-Nov-19	N	SOIL
D-B20-9.5-10.0	02-Nov-19	N	SOIL
D-B21-10.0-10.5	01-Nov-19	N	SOIL
D-B21-15.0-15.5	01-Nov-19	N	SOIL
D-B21-19.5-20.0	01-Nov-19	N	SOIL
D-B21-2.5-3.0	01-Nov-19	N	SOIL
D-B21-24.5-25.0	01-Nov-19	N	SOIL
D-B21-5.0-5.5	01-Nov-19	N	SOIL
D-B21-7.5-8.0	01-Nov-19	N	SOIL
D-B22-10.0-10.5	29-Oct-19	N	SOIL
D-B22-15.0-15.5	29-Oct-19	N	SOIL
D-B22-5.0-5.5	29-Oct-19	N	SOIL
D-B22-7.5-8.0	29-Oct-19	N	SOIL
D-B23-14.5-15.0	31-Oct-19	N	SOIL

Sample ID	Sample Date	Sample Purpose	Matrix
D-B23-19.5-20.0	31-Oct-19	N	SOIL
D-B23-25-3.0	31-Oct-19	N	SOIL
D-B23-5.0-5.5	31-Oct-19	N	SOIL
D-B23-7.5-8.0	31-Oct-19	N	SOIL
D-B23-9.5-10.0	31-Oct-19	N	SOIL
D-B24-10.0-10.5	30-Oct-19	N	SOIL
D-B24-15.0-15.5	30-Oct-19	N	SOIL
D-B24-19.5-20.0	30-Oct-19	N	SOIL
D-B24-2.5-3.0	30-Oct-19	N	SOIL
D-B24-5.0-5.5	30-Oct-19	N	SOIL
D-B24-7.5-8.0	30-Oct-19	N	SOIL
D-B25-10.0-10.5	31-Oct-19	N	SOIL
D-B25-15.0-15.5	31-Oct-19	N	SOIL
D-B25-2.5-3.0	30-Oct-19	N	SOIL
D-B25-20.0-20.5	31-Oct-19	N	SOIL
D-B25-25.0-25.5	31-Oct-19	N	SOIL
D-B25-30.0-30.5	31-Oct-19	N	SOIL
D-B25-40.0-40.5	31-Oct-19	N	SOIL
D-B25-5.0-5.5	30-Oct-19	N	SOIL
D-B25-7.5-8.0	30-Oct-19	N	SOIL
D-B26-10.0-10.5	02-Nov-19	N	SOIL
D-B26-15.0-15.5	02-Nov-19	N	SOIL
D-B26-2.5-3.0	01-Nov-19	N	SOIL
D-B26-20.0-20.5	02-Nov-19	N	SOIL
D-B26-25.0-25.5	02-Nov-19	N	SOIL
D-B26-30.0-30.5	02-Nov-19	N	SOIL
D-B26-40.0-40.5	02-Nov-19	N	SOIL
D-B26-5.0-5.5	01-Nov-19	N	SOIL
D-B26-7.5-8.0	02-Nov-19	N	SOIL
D-B27-10.0-10.5	03-Nov-19	N	SOIL
D-B27-15.0-15.5	03-Nov-19	N	SOIL
D-B27-2.5-3.0	03-Nov-19	N	SOIL

Sample ID	Sample Date	Sample Purpose	Matrix
D-B27-20.0-20.5	03-Nov-19	N	SOIL
D-B27-25.0-25.5	03-Nov-19	N	SOIL
D-B27-30.0-30.5	04-Nov-19	N	SOIL
D-B27-40.0-40.5	04-Nov-19	N	SOIL
D-B27-5.0-5.5	03-Nov-19	N	SOIL
D-B27-7.5-8.0	03-Nov-19	N	SOIL
D-B28-10.0-10.5	29-Oct-19	N	SOIL
D-B28-15.0-15.5	29-Oct-19	N	SOIL
D-B28-19.5-20.0	29-Oct-19	N	SOIL
D-B28-5.0-5.5	29-Oct-19	N	SOIL
D-B29-10.0-10.5	07-Nov-19	N	SOIL
D-B29-15.0-15.5	07-Nov-19	N	SOIL
D-B29-20.0-20.5	07-Nov-19	N	SOIL
D-B29-5.0-5.5	07-Nov-19	N	SOIL
D-B30-10.0-10.5	01-Nov-19	N	SOIL
D-B30-15.0-15.5	01-Nov-19	N	SOIL
D-B30-19.5-20.0	01-Nov-19	N	SOIL
D-B30-5.0-5.5	01-Nov-19	N	SOIL
D-B31-10.0-10.5	06-Nov-19	N	SOIL
D-B31-15.0-15.5	06-Nov-19	N	SOIL
D-B31-20.0-20.5	06-Nov-19	N	SOIL
D-B32-10.0-10.5	06-Nov-19	N	SOIL
D-B32-15.0-15.5	06-Nov-19	N	SOIL
D-B32-20.0-20.5	06-Nov-19	N	SOIL
D-B33-10.0-10.5	06-Nov-19	N	SOIL
D-B33-15.0-15.5	06-Nov-19	N	SOIL
D-B33-20.0-20.5	06-Nov-19	N	SOIL
D-B34-10.0-10.5	06-Nov-19	N	SOIL
D-B34-15.0-15.5	06-Nov-19	N	SOIL
D-B34-20.0-20.5	06-Nov-19	N	SOIL
D-B35-10.0-10.5	05-Nov-19	N	SOIL
D-B35-15.0-15.5	05-Nov-19	N	SOIL

Sample ID	Sample Date	Sample Purpose	Matrix
D-B35-20.0-20.5	05-Nov-19	N	SOIL
D-MW25	07-Nov-19	N	WATER
D-MW26	07-Nov-19	N	WATER
D-MW27	07-Nov-19	N	WATER
D-TAR-01	02-Nov-19	N	WATER
D-TAR-01	02-Nov-19	N	SOIL
D-TB01-102719	27-Oct-19	N	SOIL
D-TB01-102919	29-Oct-19	TB	SOIL
D-TB01-103119	31-Oct-19	TB	SOIL
D-TB01-110119	01-Nov-19	TB	SOIL
D-TB01-110719	07-Nov-19	TB	SOIL
D-TB03-110819	08-Nov-19	TB	WATER

Notes:
EB = equipment blank
FD = field duplicate
ID = identification
REG = regular sample
TB = trip blank

ATTACHMENT B

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B12-5.0-5.5	SW8270D-SIM	Acenaphthene	0.0553	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Acenaphthylene	0.847	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Anthracene	0.427	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Benzo(a)anthracene	1.24	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Benzo(a)pyrene	2.65	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Benzo(b)fluoranthene	2.58	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Benzo(g,h,i)perylene	3.17	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Benzo(k)fluoranthene	0.777	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Chrysene	1.61	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Fluoranthene	5.61	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Fluorene	0.134	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	2.16	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Naphthalene	0.775	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Phenanthrene	3.83	MG/KG	J	FD>RPD
D-B12-5.0-5.5	SW8270D-SIM	Pyrene	6.53	MG/KG	J	FD>RPD
D-B12-7.5-8.0	SW8270D-SIM	Acenaphthylene	1.84	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Anthracene	0.826	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Benzo(a)anthracene	2.79	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Benzo(a)pyrene	5.93	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Benzo(b)fluoranthene	6.16	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Benzo(g,h,i)perylene	7.41	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Benzo(k)fluoranthene	2.26	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Chrysene	3.59	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Fluoranthene	11.5	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	5.01	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Phenanthrene	7.2	MG/KG	J	Sur>UCL
D-B12-7.5-8.0	SW8270D-SIM	Pyrene	14.2	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Acenaphthene	0.544	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Acenaphthene	0.544	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Acenaphthylene	14.2	MG/KG	J	Sur>UCL

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B13-1.0-1.5	SW8270D-SIM	Acenaphthylene	14.2	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Anthracene	6.63	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Anthracene	6.63	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(a)anthracene	17.5	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(a)anthracene	17.5	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(a)pyrene	28.9	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(a)pyrene	28.9	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(b)fluoranthene	26.4	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(b)fluoranthene	26.4	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(g,h,i)perylene	30.3	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(g,h,i)perylene	30.3	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(k)fluoranthene	7.09	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Benzo(k)fluoranthene	7.09	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Chrysene	20.7	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Chrysene	20.7	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Fluoranthene	71	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Fluoranthene	71	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Fluorene	4.49	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Fluorene	4.49	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	21.5	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	21.5	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Naphthalene	35.9	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Naphthalene	35.9	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Phenanthrene	70.8	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Phenanthrene	70.8	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Pyrene	83.6	MG/KG	J	Sur>UCL
D-B13-1.0-1.5	SW8270D-SIM	Pyrene	83.6	MG/KG	J	Sur>UCL
D-B13-15.0-15.5	SW8270D-SIM	Anthracene	0.0267	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Benzo(a)anthracene	0.055	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Benzo(a)pyrene	0.0817	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0832	MG/KG	J	FD>RPD

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B13-15.0-15.5	SW8270D-SIM	Benzo(g,h,i)perylene	0.0836	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Benzo(k)fluoranthene	0.0268	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Chrysene	0.0607	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Dibenz(a,h)Anthracene	0.00962	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Fluoranthene	0.206	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Fluorene	0.0284	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0589	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Phenanthrene	0.246	MG/KG	J	FD>RPD
D-B13-15.0-15.5	SW8270D-SIM	Pyrene	0.243	MG/KG	J	FD>RPD
D-B13-2.5-3.0	SW8260C	2-Butanone	0.971	MG/KG	UJ	MS<LCL
D-B13-2.5-3.0	SW8260C	Bromomethane	0.243	MG/KG	UJ	MS<LCL
D-B13-2.5-3.0	SW8260C	Bromomethane	0.243	MG/KG	UJ	SD<LCL
D-B13-2.5-3.0	SW8260C	Chloroethane	0.485	MG/KG	UJ	MS<LCL
D-B13-2.5-3.0	SW8260C	Chloroethane	0.485	MG/KG	UJ	SD<LCL
D-B13-2.5-3.0	SW9012	Cyanide, Total	0.0668	MG/KG	J	SD<LCL
D-B13-2.5-3.0	SW9012	Cyanide, Total	0.0668	MG/KG	J	MS<LCL
D-B15-2.5-3.0	SW6020	Arsenic	10.8	MG/KG	J	MS>UCL
D-B15-2.5-3.0	SW6020	Chromium	11.1	MG/KG	J	SD>UCL
D-B15-2.5-3.0	SW6020	Chromium	11.1	MG/KG	J	MS>UCL
D-B15-2.5-3.0	SW6020	Lead	30.5	MG/KG	J	MS>UCL
D-B15-2.5-3.0	SW6020	Lead	30.5	MG/KG	J	SD>UCL
D-B15-2.5-3.0	SW8270D-SIM	Acenaphthylene	0.00936	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Anthracene	0.00878	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Benzo(a)anthracene	0.0242	MG/KG	J	SD<LCL
D-B15-2.5-3.0	SW8270D-SIM	Benzo(a)anthracene	0.0242	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Benzo(a)pyrene	0.0329	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Benzo(a)pyrene	0.0329	MG/KG	J	SD<LCL
D-B15-2.5-3.0	SW8270D-SIM	Benzo(b)fluoranthene	0.0454	MG/KG	J	SD<LCL
D-B15-2.5-3.0	SW8270D-SIM	Benzo(b)fluoranthene	0.0454	MG/KG	J	MS>UCL
D-B15-2.5-3.0	SW8270D-SIM	Benzo(b)fluoranthene	0.0454	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Benzo(g,h,i)perylene	0.0228	MG/KG	J	MSRPD

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B15-2.5-3.0	SW8270D-SIM	Benzo(g,h,i)perylene	0.0228	MG/KG	J	SD<LCL
D-B15-2.5-3.0	SW8270D-SIM	Benzo(k)fluoranthene	0.00917	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Chrysene	0.0341	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Chrysene	0.0341	MG/KG	J	SD<LCL
D-B15-2.5-3.0	SW8270D-SIM	Fluoranthene	0.0644	MG/KG	J	SD<LCL
D-B15-2.5-3.0	SW8270D-SIM	Fluoranthene	0.0644	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Fluoranthene	0.0644	MG/KG	J	MS>UCL
D-B15-2.5-3.0	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0149	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0149	MG/KG	J	SD<LCL
D-B15-2.5-3.0	SW8270D-SIM	Phenanthrene	0.0504	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Phenanthrene	0.0504	MG/KG	J	SD<LCL
D-B15-2.5-3.0	SW8270D-SIM	Phenanthrene	0.0504	MG/KG	J	MS>UCL
D-B15-2.5-3.0	SW8270D-SIM	Pyrene	0.0776	MG/KG	J	MSRPD
D-B15-2.5-3.0	SW8270D-SIM	Pyrene	0.0776	MG/KG	J	MS>UCL
D-B15-2.5-3.0	SW8270D-SIM	Pyrene	0.0776	MG/KG	J	SD<LCL
D-B16-15.0-15.5	SW8270D-SIM	Acenaphthylene	0.0368	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Anthracene	0.0245	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Benzo(a)anthracene	0.0722	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Benzo(a)pyrene	0.13	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Benzo(b)fluoranthene	0.136	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Benzo(g,h,i)perylene	0.113	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Chrysene	0.0877	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Fluoranthene	0.221	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Fluorene	0.00932	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0802	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Naphthalene	0.0279	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Phenanthrene	0.152	MG/KG	J	FD>RPD
D-B16-15.0-15.5	SW8270D-SIM	Pyrene	0.281	MG/KG	J	FD>RPD
D-B20-2.5-3.0	SW6020	Arsenic	11.7	MG/KG	J	MS>UCL
D-B20-2.5-3.0	SW6020	Arsenic	11.7	MG/KG	J	SD>UCL
D-B20-2.5-3.0	SW6020	Chromium	13.1	MG/KG	J	MS>UCL

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B20-2.5-3.0	SW6020	Chromium	13.1	MG/KG	J	SD>UCL
D-B20-2.5-3.0	SW8270D-SIM	Benzo(a)anthracene	0.0502	MG/KG	J	SD<LCL
D-B20-2.5-3.0	SW8270D-SIM	Benzo(a)anthracene	0.0502	MG/KG	J	MS<LCL
D-B20-2.5-3.0	SW8270D-SIM	Benzo(a)pyrene	0.0716	MG/KG	J	SD<LCL
D-B20-2.5-3.0	SW8270D-SIM	Benzo(a)pyrene	0.0716	MG/KG	J	MS<LCL
D-B20-2.5-3.0	SW8270D-SIM	Benzo(b)fluoranthene	0.0991	MG/KG	J	MS<LCL
D-B20-2.5-3.0	SW8270D-SIM	Benzo(b)fluoranthene	0.0991	MG/KG	J	SD<LCL
D-B20-2.5-3.0	SW8270D-SIM	Benzo(g,h,i)perylene	0.0538	MG/KG	J	MS<LCL
D-B20-2.5-3.0	SW8270D-SIM	Benzo(g,h,i)perylene	0.0538	MG/KG	J	SD<LCL
D-B20-2.5-3.0	SW8270D-SIM	Chrysene	0.0711	MG/KG	J	MS<LCL
D-B20-2.5-3.0	SW8270D-SIM	Chrysene	0.0711	MG/KG	J	SD<LCL
D-B20-2.5-3.0	SW8270D-SIM	Fluoranthene	0.119	MG/KG	J	MS<LCL
D-B20-2.5-3.0	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0454	MG/KG	J	SD<LCL
D-B20-2.5-3.0	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0454	MG/KG	J	MS<LCL
D-B20-2.5-3.0	SW8270D-SIM	Phenanthrene	0.0505	MG/KG	J	MSRPD
D-B20-2.5-3.0	SW8270D-SIM	Phenanthrene	0.0505	MG/KG	J	SD>UCL
D-B20-2.5-3.0	SW8270D-SIM	Pyrene	0.111	MG/KG	J	SD<LCL
D-B20-2.5-3.0	SW8270D-SIM	Pyrene	0.111	MG/KG	J	MS<LCL
D-B20-7.5-8.0	SW7471B	Mercury	0.0304	MG/KG	J	LCS<LCL
D-B20-9.5-10.0	SW7471B	Mercury	0.0189	MG/KG	UJ	LCS<LCL
D-B23-25-3.0	SW8270D-SIM	Benzo(a)anthracene	0.117	MG/KG	J	FD>RPD
D-B23-25-3.0	SW8270D-SIM	Chrysene	0.143	MG/KG	J	FD>RPD
D-B23-5.0-5.5	SW8270D-SIM	Benzo(a)anthracene	0.00635	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Benzo(a)anthracene	0.00635	MG/KG	J	MS>UCL
D-B23-5.0-5.5	SW8270D-SIM	Benzo(a)pyrene	0.0133	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Benzo(a)pyrene	0.0133	MG/KG	J	MS>UCL
D-B23-5.0-5.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0148	MG/KG	J	MS>UCL
D-B23-5.0-5.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0148	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Benzo(g,h,i)perylene	0.0194	MG/KG	J	MS>UCL
D-B23-5.0-5.5	SW8270D-SIM	Benzo(g,h,i)perylene	0.0194	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Chrysene	0.00828	MG/KG	J	MS>UCL

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B23-5.0-5.5	SW8270D-SIM	Chrysene	0.00828	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Fluoranthene	0.0251	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Fluoranthene	0.0251	MG/KG	J	MS>UCL
D-B23-5.0-5.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0125	MG/KG	J	MS>UCL
D-B23-5.0-5.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0125	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Phenanthrene	0.0149	MG/KG	J	MS>UCL
D-B23-5.0-5.5	SW8270D-SIM	Phenanthrene	0.0149	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Pyrene	0.0293	MG/KG	J	SD>UCL
D-B23-5.0-5.5	SW8270D-SIM	Pyrene	0.0293	MG/KG	J	MS>UCL
D-B24-19.5-20.0	SW8270D-SIM	Acenaphthene	0.00198	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Acenaphthylene	0.0382	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Anthracene	0.018	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Benzo(a)anthracene	0.0411	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Benzo(a)pyrene	0.0818	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Benzo(b)fluoranthene	0.0813	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Benzo(g,h,i)perylene	0.104	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Benzo(k)fluoranthene	0.0239	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Chrysene	0.0506	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Fluoranthene	0.181	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Fluorene	0.00825	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0649	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Naphthalene	0.0215	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Phenanthrene	0.145	MG/KG	J	FD>RPD
D-B24-19.5-20.0	SW8270D-SIM	Pyrene	0.215	MG/KG	J	FD>RPD
D-B26-10.0-10.5	SW8270D-SIM	Fluoranthene	0.0194	MG/KG	J	SD>UCL
D-B26-10.0-10.5	SW8270D-SIM	Phenanthrene	0.00888	MG/KG	J	SD>UCL
D-B26-10.0-10.5	SW8270D-SIM	Pyrene	0.0238	MG/KG	J	SD>UCL
D-B26-15.0-15.5	SW7471B	Mercury	0.0185	MG/KG	UJ	LCS<LCL
D-B26-2.5-3.0	SW7471B	Mercury	0.0189	MG/KG	UJ	LCS<LCL
D-B26-20.0-20.5	SW7471B	Mercury	0.0189	MG/KG	UJ	LCS<LCL
D-B26-25.0-25.5	SW7471B	Mercury	0.0192	MG/KG	UJ	LCS<LCL

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B26-5.0-5.5	SW6020	Arsenic	21.2	MG/KG	J	MS>UCL
D-B26-7.5-8.0	SW7471B	Mercury	0.0192	MG/KG	UJ	LCS<LCL
D-B27-10.0-10.5	SW6020	Barium	84.7	MG/KG	J	SD>UCL
D-B27-2.5-3.0	SW6020	Barium	426	MG/KG	J	FD>RPD
D-B27-25.0-25.5	SW7471B	Mercury	0.0172	MG/KG	UJ	LCS<LCL
D-B28-15.0-15.5	SW6020	Barium	82.8	MG/KG	J	MS>UCL
D-B28-5.0-5.5	SW8270D-SIM	Anthracene	0.00206	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Benzo(a)anthracene	0.0104	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Benzo(a)pyrene	0.0177	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0291	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Benzo(g,h,i)perylene	0.0201	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Benzo(k)fluoranthene	0.00705	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Chrysene	0.0148	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Fluoranthene	0.0261	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0158	MG/KG	J	FD>RPD
D-B28-5.0-5.5	SW8270D-SIM	Phenanthrene	0.011	MG/KG	J	FD>RPD
D-B29-10.0-10.5	SW8270D-SIM	Benzo(a)anthracene	0.00596	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Benzo(a)pyrene	0.00735	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0102	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Benzo(g,h,i)perylene	0.00666	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Benzo(k)fluoranthene	0.00267	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Chrysene	0.00635	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Fluoranthene	0.00866	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.00507	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Phenanthrene	0.00384	MG/KG	J	Sur>UCL
D-B29-10.0-10.5	SW8270D-SIM	Pyrene	0.0107	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Acenaphthylene	0.00628	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Anthracene	0.00384	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Benzo(a)anthracene	0.0376	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Benzo(a)pyrene	0.0772	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0766	MG/KG	J	Sur>UCL

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B29-15.0-15.5	SW8270D-SIM	Benzo(g,h,i)perylene	0.0918	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Benzo(k)fluoranthene	0.0253	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Chrysene	0.046	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Fluoranthene	0.087	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.062	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Phenanthrene	0.025	MG/KG	J	Sur>UCL
D-B29-15.0-15.5	SW8270D-SIM	Pyrene	0.138	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Acenaphthylene	0.00219	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Anthracene	0.00183	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Benzo(a)anthracene	0.012	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Benzo(a)pyrene	0.022	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0257	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Benzo(g,h,i)perylene	0.0165	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Benzo(k)fluoranthene	0.00794	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Chrysene	0.0143	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Fluoranthene	0.028	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0128	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Phenanthrene	0.00921	MG/KG	J	Sur>UCL
D-B29-20.0-20.5	SW8270D-SIM	Pyrene	0.0409	MG/KG	J	Sur>UCL
D-B29-5.0-5.5	SW6020	Arsenic	15.9	MG/KG	J	MS>UCL
D-B29-5.0-5.5	SW6020	Chromium	18.1	MG/KG	J	SD>UCL
D-B29-5.0-5.5	SW6020	Chromium	18.1	MG/KG	J	MS>UCL
D-B29-5.0-5.5	SW6020	Lead	32.8	MG/KG	J	MS>UCL
D-B29-5.0-5.5	SW6020	Lead	32.8	MG/KG	J	SD>UCL
D-B29-5.0-5.5	SW6020	Silver	1.85	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW6020	Silver	1.85	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	1,1,1-Trichloroethane	0.245	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	2-Butanone	0.978	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	2-Butanone	0.978	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW8260C	Acetone	4.89	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	Bromomethane	0.245	MG/KG	UJ	MS<LCL

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B29-5.0-5.5	SW8260C	Bromomethane	0.245	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW8260C	Chloroethane	0.489	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW8260C	Chloroethane	0.489	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	Cyclohexane	0.245	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	Cyclohexane	0.245	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW8260C	Iodomethane (Methyl Iodide)	0.978	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	Iodomethane (Methyl Iodide)	0.978	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW8260C	Iodomethane (Methyl Iodide)	0.978	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	Iodomethane (Methyl Iodide)	0.978	MG/KG	UJ	LCS<LCL
D-B29-5.0-5.5	SW8260C	n-Hexane	0.489	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	n-Hexane	0.489	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	n-Hexane	0.489	MG/KG	UJ	LCS<LCL
D-B29-5.0-5.5	SW8260C	n-Hexane	0.489	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW8260C	Propene	0.245	MG/KG	UJ	LCS<LCL
D-B29-5.0-5.5	SW8260C	Propene	0.245	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	Propene	0.245	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW8260C	Trichlorofluoromethane	0.245	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW8260C	Trichlorofluoromethane	0.245	MG/KG	UJ	SD<LCL
D-B29-5.0-5.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0122	MG/KG	J	SD>UCL
D-B29-5.0-5.5	SW8270D-SIM	Benzo(b)fluoranthene	0.0122	MG/KG	J	MSRPD
D-B29-5.0-5.5	SW8270D-SIM	Pyrene	0.0211	MG/KG	J	MSRPD
D-B29-5.0-5.5	SW8270D-SIM	Pyrene	0.0211	MG/KG	J	SD>UCL
D-B29-5.0-5.5	SW9012	Cyanide, Total	0.0545	MG/KG	UJ	MS<LCL
D-B29-5.0-5.5	SW9012	Cyanide, Total	0.0545	MG/KG	UJ	SD<LCL
D-B30-5.0-5.5	SW6020	Lead	26.8	MG/KG	J	FD>RPD
D-B30-5.0-5.5	SW7471B	Mercury	0.0182	MG/KG	UJ	FD>RPD
D-B35-15.0-15.5	SW6020	Silver	1.85	MG/KG	UJ	MS<LCL
D-B35-15.0-15.5	SW6020	Silver	1.85	MG/KG	UJ	SD<LCL
D-FD01-103019	SW8270D-SIM	Acenaphthene	0.00167	MG/KG	UJ	FD>RPD
D-FD01-103019	SW8270D-SIM	Acenaphthylene	0.0103	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Anthracene	0.00347	MG/KG	J	FD>RPD

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-FD01-103019	SW8270D-SIM	Benzo(a)anthracene	0.00975	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Benzo(a)pyrene	0.0232	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Benzo(b)fluoranthene	0.0237	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Benzo(g,h,i)perylene	0.0322	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Benzo(k)fluoranthene	0.00611	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Chrysene	0.0131	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Fluoranthene	0.0471	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Fluorene	0.00167	MG/KG	UJ	FD>RPD
D-FD01-103019	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0202	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Naphthalene	0.0167	MG/KG	UJ	FD>RPD
D-FD01-103019	SW8270D-SIM	Phenanthrene	0.0327	MG/KG	J	FD>RPD
D-FD01-103019	SW8270D-SIM	Pyrene	0.0615	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Anthracene	0.0495	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Benzo(a)anthracene	0.124	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Benzo(a)pyrene	0.184	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Benzo(b)fluoranthene	0.196	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Benzo(g,h,i)perylene	0.173	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Benzo(k)fluoranthene	0.0654	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Chrysene	0.161	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Dibenz(a,h)Anthracene	0.025	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Fluoranthene	0.491	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Fluorene	0.0474	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.131	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Phenanthrene	0.529	MG/KG	J	FD>RPD
D-FD01-103119	SW8270D-SIM	Pyrene	0.524	MG/KG	J	FD>RPD
D-FD01-110119	SW6020	Lead	52.3	MG/KG	J	FD>RPD
D-FD01-110119	SW7471B	Mercury	0.0208	MG/KG	J	FD>RPD
D-FD01-110219	SW7471B	Mercury	0.0172	MG/KG	UJ	LCS<LCL
D-FD01-110319	SW6020	Barium	142	MG/KG	J	FD>RPD
D-FD01-110719	SW8260C	Cyclohexane	0.005	MG/L	UJ	Misc
D-FD02-102919	SW8270D-SIM	Acenaphthylene	0.0175	MG/KG	J	FD>RPD

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-FD02-102919	SW8270D-SIM	Anthracene	0.013	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Benzo(a)anthracene	0.0406	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Benzo(a)pyrene	0.0676	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Benzo(b)fluoranthene	0.0674	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Benzo(g,h,i)perylene	0.056	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Chrysene	0.046	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Fluoranthene	0.127	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Fluorene	0.00482	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.0401	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Naphthalene	0.0167	MG/KG	UJ	FD>RPD
D-FD02-102919	SW8270D-SIM	Phenanthrene	0.0837	MG/KG	J	FD>RPD
D-FD02-102919	SW8270D-SIM	Pyrene	0.155	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Acenaphthene	0.0166	MG/KG	UJ	FD>RPD
D-FD02-103119	SW8270D-SIM	Acenaphthylene	0.107	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Anthracene	0.047	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Benzo(a)anthracene	0.175	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Benzo(a)pyrene	0.386	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Benzo(b)fluoranthene	0.418	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Benzo(g,h,i)perylene	0.468	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Benzo(k)fluoranthene	0.0903	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Chrysene	0.228	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Fluoranthene	0.633	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Fluorene	0.0166	MG/KG	UJ	FD>RPD
D-FD02-103119	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.317	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Naphthalene	0.166	MG/KG	UJ	FD>RPD
D-FD02-103119	SW8270D-SIM	Phenanthrene	0.367	MG/KG	J	FD>RPD
D-FD02-103119	SW8270D-SIM	Pyrene	0.777	MG/KG	J	FD>RPD
D-FD02-110319	SW7471B	Mercury	0.0179	MG/KG	UJ	LCS<LCL
D-FD03-102919	SW8270D-SIM	Anthracene	0.00167	MG/KG	UJ	FD>RPD
D-FD03-102919	SW8270D-SIM	Benzo(a)anthracene	0.00596	MG/KG	J	FD>RPD
D-FD03-102919	SW8270D-SIM	Benzo(a)pyrene	0.00826	MG/KG	J	FD>RPD

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-FD03-102919	SW8270D-SIM	Benzo(b)fluoranthene	0.0119	MG/KG	J	FD>RPD
D-FD03-102919	SW8270D-SIM	Benzo(g,h,i)perylene	0.00581	MG/KG	J	FD>RPD
D-FD03-102919	SW8270D-SIM	Benzo(k)fluoranthene	0.00307	MG/KG	J	FD>RPD
D-FD03-102919	SW8270D-SIM	Chrysene	0.00764	MG/KG	J	FD>RPD
D-FD03-102919	SW8270D-SIM	Fluoranthene	0.0125	MG/KG	J	FD>RPD
D-FD03-102919	SW8270D-SIM	Indeno(1,2,3-c,d)Pyrene	0.00471	MG/KG	J	FD>RPD
D-FD03-102919	SW8270D-SIM	Phenanthrene	0.00619	MG/KG	J	FD>RPD
D-FD03-103119	SW8270D-SIM	Benzo(a)anthracene	0.206	MG/KG	J	FD>RPD
D-FD03-103119	SW8270D-SIM	Chrysene	0.243	MG/KG	J	FD>RPD
D-FD05-110119	SW7471B	Mercury	0.0192	MG/KG	UJ	LCS<LCL
B-FD02-102819	SW6020	Chromium	4.01	MG/KG	J	FD>RPD
B-FD02-102819	SW7471B	Mercury	0.0192	MG/KG	UJ	FD>RPD
B-FD02-102819	SW8270SIM	Benzo(a)anthracene	0.00975	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Benzo(a)pyrene	0.0176	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Benzo(b)fluoranthene	0.026	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Benzo(g,h,i)perylene	0.00904	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Benzo(k)fluoranthene	0.00721	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Chrysene	0.013	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Fluoranthene	0.0258	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Indeno(1,2,3-c,d)Pyrene	0.00772	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Phenanthrene	0.00975	MG/KG	J	FD>RPD
B-FD02-102819	SW8270SIM	Pyrene	0.0358	MG/KG	J	FD>RPD
D-B16-2.5-3.0	SW8270SIM	Fluorene	0.0249	MG/KG	J	FD>RPD
D-B16-2.5-3.0	SW8270SIM	Naphthalene	0.167	MG/KG	UJ	FD>RPD
D-B18-5.0-5.5	SW6020	Arsenic	9.69	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW6020	Chromium	8.67	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW6020	Lead	38.1	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW7471B	Mercury	0.0237	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Acenaphthylene	0.0179	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Anthracene	0.0165	MG/KG	J	FD>RPD

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B18-5.0-5.5	SW8270SIM	Benzo(a)anthracene	0.0643	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Benzo(a)pyrene	0.115	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Benzo(b)fluoranthene	0.179	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Benzo(g,h,i)perylene	0.0661	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Benzo(k)fluoranthene	0.0389	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Chrysene	0.0865	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Fluoranthene	0.181	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Indeno(1,2,3-c,d)Pyrene	0.0541	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Phenanthrene	0.0744	MG/KG	J	FD>RPD
D-B18-5.0-5.5	SW8270SIM	Pyrene	0.25	MG/KG	J	FD>RPD
D-B20-0-102719	SW8270SIM	Naphthalene	0.0238	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW6020	Chromium	8.2	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW7471B	Mercury	0.0492	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Benzo(a)anthracene	0.00468	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Benzo(a)pyrene	0.00652	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Benzo(b)fluoranthene	0.0113	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Benzo(g,h,i)perylene	0.00345	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Benzo(k)fluoranthene	0.00328	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Chrysene	0.00657	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Fluoranthene	0.0103	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Indeno(1,2,3-c,d)Pyrene	0.00278	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Phenanthrene	0.00484	MG/KG	J	FD>RPD
D-B32-5.0-5.5	SW8270SIM	Pyrene	0.0123	MG/KG	J	FD>RPD
D-B34-0-102719	SW6020	Barium	208	MG/KG	J	FD>RPD
D-B34-0-102719	SW6020	Lead	41.3	MG/KG	J	FD>RPD
D-B34-0-102719	SW7471B	Mercury	0.0288	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Benzo(a)anthracene	0.0335	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Benzo(a)pyrene	0.0467	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Benzo(b)fluoranthene	0.0888	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Benzo(g,h,i)perylene	0.0371	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Benzo(k)fluoranthene	0.0221	MG/KG	J	FD>RPD

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-B34-0-102719	SW8270SIM	Chrysene	0.0504	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Fluoranthene	0.0847	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Indeno(1,2,3-c,d)Pyrene	0.0323	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Phenanthrene	0.0273	MG/KG	J	FD>RPD
D-B34-0-102719	SW8270SIM	Pyrene	0.0729	MG/KG	J	FD>RPD
D-FD01-102719	SW8270SIM	Naphthalene	0.0166	MG/KG	UJ	FD>RPD
D-FD01-102819	SW6020	Barium	76.4	MG/KG	J	FD>RPD
D-FD01-102819	SW6020	Lead	12.6	MG/KG	J	FD>RPD
D-FD01-102819	SW7471B	Mercury	0.0185	MG/KG	UJ	FD>RPD
D-FD01-102819	SW8270SIM	Benzo(a)anthracene	0.00166	MG/KG	UJ	FD>RPD
D-FD01-102819	SW8270SIM	Benzo(a)pyrene	0.00234	MG/KG	J	FD>RPD
D-FD01-102819	SW8270SIM	Benzo(b)fluoranthene	0.00385	MG/KG	J	FD>RPD
D-FD01-102819	SW8270SIM	Benzo(g,h,i)perylene	0.00166	MG/KG	UJ	FD>RPD
D-FD01-102819	SW8270SIM	Benzo(k)fluoranthene	0.00166	MG/KG	UJ	FD>RPD
D-FD01-102819	SW8270SIM	Chrysene	0.0021	MG/KG	J	FD>RPD
D-FD01-102819	SW8270SIM	Fluoranthene	0.00468	MG/KG	J	FD>RPD
D-FD01-102819	SW8270SIM	Indeno(1,2,3-c,d)Pyrene	0.00166	MG/KG	UJ	FD>RPD
D-FD01-102819	SW8270SIM	Phenanthrene	0.00198	MG/KG	J	FD>RPD
D-FD01-102819	SW8270SIM	Pyrene	0.00575	MG/KG	J	FD>RPD
D-FD01-102919	SW8270SIM	Fluorene	0.0441	MG/KG	J	FD>RPD
D-FD01-102919	SW8270SIM	Naphthalene	0.136	MG/KG	J	FD>RPD
D-FD03-102819	SW6020	Arsenic	20.7	MG/KG	J	FD>RPD
D-FD03-102819	SW6020	Chromium	16.6	MG/KG	J	FD>RPD
D-FD03-102819	SW6020	Lead	15.6	MG/KG	J	FD>RPD
D-FD03-102819	SW7471B	Mercury	0.0172	MG/KG	UJ	FD>RPD
D-FD03-102819	SW8270SIM	Benzo(a)anthracene	0.00597	MG/KG	J	FD>RPD
D-FD03-102819	SW8270SIM	Benzo(a)pyrene	0.0106	MG/KG	J	FD>RPD
D-FD03-102819	SW8270SIM	Benzo(b)fluoranthene	0.0149	MG/KG	J	FD>RPD
D-FD03-102819	SW8270SIM	Benzo(g,h,i)perylene	0.00603	MG/KG	J	FD>RPD
D-FD03-102819	SW8270SIM	Benzo(k)fluoranthene	0.00427	MG/KG	J	FD>RPD
D-FD03-102819	SW8270SIM	Chrysene	0.00728	MG/KG	J	FD>RPD

Sample ID	Method	Analyte	Final Result	Units	Validation Flag	Validation Reason
D-FD03-102819	SW8270SIM	Fluoranthene	0.0151	MG/KG	J	FD>RPD
D-FD03-102819	SW8270SIM	Indeno(1,2,3-c,d)Pyrene	0.00495	MG/KG	J	FD>RPD
D-FD03-102819	SW8270SIM	Phenanthrene	0.00538	MG/KG	J	FD>RPD
D-FD03-102819	SW8270SIM	Pyrene	0.0224	MG/KG	J	FD>RPD
D-MW25	SW8260C	Cyclohexane	0.005	MG/L	UJ	Misc
D-MW26	SW8260C	Cyclohexane	0.005	MG/L	UJ	Misc
D-MW27	SW8260C	Acetone	0.1	MG/L	UJ	MS<LCL
D-MW27	SW8260C	Cyclohexane	0.005	MG/L	UJ	Misc

Notes:

FD>RPD = Field duplicate relative percent difference criterion exceeded

LCS<LCL = Laboratory control sample recovery less than the lower control limit

MISC = Laboratory flagged for matrix interference

MS<LCL = Matrix spike recovery less than the lower control limit

MS>UCL = Matrix spike recovery greater than the upper control limit

MSRPD = Matrix spike duplicate relative percent difference criterion exceeded

SD<LCL = Matrix spike duplicate recovery less than the lower control limit

SD>UCL = Matrix spike duplicate recovery greater than the upper control limit

Sur>UCL = Surrogate recovery greater than the upper control limit

Appendix I
Manifests and Bills of Lading

Manifests will be provided when available.

Appendix J
Statistical Evaluation Supporting Documentation

Tables

Table J-1
Summary Statistics for Arsenic Concentrations in Soil (Upper 20 Feet)

Location	Borehole	Frequency of Detection			Minimum Values		Maximum Values		Depth of Max Detect (ft bgs)	Mean (mg/kg)	Median (mg/kg)	Standard Deviation (mg/kg)	Coefficient of Variation	Skewness	Kurtosis	SW Normality Test (p-value)
		Total Samples	Detect Results	Detect Freq. (%)	Non-Detect (mg/kg)	Detect (mg/kg)	Non-Detect (mg/kg)	Detect (mg/kg)								
Background	B18	7	7	100	---	8.70	---	21.8	7.25	16.0	16.4	5.07	0.317	-0.575	-1.13	0.326
	B22	6	6	100	---	9.18	---	25.8	5.25	19.0	19.4	6.42	0.338	-0.518	-0.871	0.591
	B27	8	8	100	---	13.8	---	24.1	5.25	18.1	18.0	3.97	0.219	0.235	-1.81	0.148
	B28	6	6	100	---	9.02	---	23.1	5.25	14.5	14.7	5.20	0.359	0.740	0.688	0.419
	B29	5	5	100	---	7.22	---	22.5	20.3	16.2	15.9	5.90	0.364	-0.834	0.693	0.658
	B30	6	6	100	---	9.51	---	16.0	19.8	12.5	12.1	2.76	0.221	0.335	-1.89	0.373
	B31	5	5	100	---	9.08	---	18.4	15.3	14.1	12.8	3.87	0.274	-0.065	-1.67	0.497
	B32	6	6	100	---	7.13	---	10.3	5.25	9.12	9.24	1.24	0.136	-0.720	-0.381	0.396
	B33	5	5	100	---	7.47	---	32.6	15.3	15.9	10.0	10.7	0.668	1.23	0.362	0.157
	B34	6	6	100	---	8.59	---	15.7	10.3	11.5	10.4	3.05	0.265	0.673	-1.84	0.172
	B35	5	5	100	---	7.69	---	14.6	10.3	12.7	13.8	2.84	0.224	-2.00	4.13	0.024
Site	B11	7	7	100	---	12.9	---	23.5	10.3	19.0	19.5	3.46	0.182	-0.785	0.692	0.782
	B12	8	8	100	---	14.10	---	23.1	15.3	18.0	17.6	2.81	0.156	0.72	0.60	0.750
	B13	8	8	100	---	12.0	---	24.5	7.75	17.9	18.0	4.75	0.266	0.022	-1.53	0.574
	B14	7	7	100	---	10.9	---	25.5	5.25	20.4	21.3	5.26	0.258	-0.953	0.393	0.264
	B15	8	8	100	---	9.77	---	24.0	10.3	16.0	14.5	5.38	0.335	0.403	-1.64	0.350
	B16	10	10	100	---	8.71	---	23.0	15.3	14.9	13.8	5.19	0.348	0.346	-1.49	0.355
	B17	6	6	100	---	7.44	---	19.4	10.3	15.1	16.9	4.35	0.289	-1.31	1.25	0.199
	B19	7	7	100	---	7.73	---	20.6	5.25	13.3	13.7	4.40	0.331	0.481	-0.169	0.911
	B20	8	8	100	---	8.99	---	21.0	5.25	13.2	12.2	3.81	0.288	1.24	1.78	0.344
	B21	8	8	100	---	7.38	---	19.7	7.75	13.6	12.3	5.10	0.374	0.276	-1.99	0.093
	B23	8	8	100	---	9.68	---	42.5	14.8	20.3	16.3	10.5	0.519	1.52	2.48	0.119
	B24	8	8	100	---	7.55	---	41.6	5.25	16.0	11.7	11.2	0.700	2.09	4.67	0.008
	B25	5	5	100	---	10.90	---	50.3	5.25	24.4	22.2	15.4	0.632	1.60	2.91	0.178
	B26	8	8	100	---	8.55	---	21.6	7.75	16.1	17.1	4.57	0.284	-0.453	-0.75	0.664

Notes:
"---" = not applicable
% = percent
bgs = below ground surface
Freq. = frequency
ft = feet
max = maximum
mg/kg = milligrams per kilogram
p-value = probability value
SW = Shapiro-Wilk

Table J-2
Summary Statistics for Lead Concentrations in Soil (Upper 20 Feet)

Location	Borehole	Frequency of Detection			Minimum Values		Maximum Values		Depth of Max Detect (ft bgs)	Mean (mg/kg)	Median (mg/kg)	Standard Deviation (mg/kg)	Coefficient of Variation	Skewness	Kurtosis	SW Normality Test (p-value)
		Total Samples	Detect Results	Detect Freq. (%)	Non-Detect (mg/kg)	Detect (mg/kg)	Non-Detect (mg/kg)	Detect (mg/kg)								
Background	B18	7	7	100	---	13.3	---	38.1	5.25	22.6	23.0	8.34	0.369	1.00	1.21	0.435
	B22	6	6	100	---	11.2	---	117	5.25	43.0	29.0	38.5	0.896	1.88	3.74	0.050
	B27	8	8	100	---	11.10	---	17.0	20.3	13.2	12.3	2.16	0.163	1.237	0.02	0.031
	B28	6	6	100	---	9.89	---	45.9	0	19.0	14.5	13.7	0.721	2.09	4.57	0.008
	B29	5	5	100	---	12.6	---	32.8	5.25	20.4	20.3	8.02	0.393	0.958	0.723	0.521
	B30	6	6	100	---	14.1	---	52.3	5.25	31.0	31.8	14.8	0.479	0.208	-1.23	0.688
	B31	5	5	100	---	6.48	---	98.2	5.25	30.7	7.26	39.6	1.29	1.79	3.02	0.019
	B32	6	6	100	---	3.86	---	62.5	5.25	31.3	34.1	23.6	0.754	-0.063	-1.61	0.567
	B33	5	5	100	---	9.34	---	222	5.25	56.5	11.7	92.9	1.64	2.19	4.83	0.001
	B34	6	6	100	---	7.70	---	41.3	0	16.1	11.7	12.5	0.779	2.28	5.38	0.003
	B35	5	5	100	---	12.6	---	30.3	0	22.1	24.1	8.53	0.385	-0.289	-3.00	0.168
Site	B11	7	7	100	---	16.4	---	420	2.75	130	93.2	139	1.07	1.83	3.82	0.041
	B12	8	8	100	---	8.74	---	531	7.75	138	87.9	171	1.24	2.12	4.97	0.007
	B13	8	8	100	---	6.70	---	89.4	1.25	31.3	19.2	28.2	0.902	1.43	1.72	0.063
	B14	7	7	100	---	9.49	---	48.7	1.25	20.0	14.0	13.6	0.683	1.95	4.09	0.020
	B15	8	8	100	---	12.6	---	56.2	1.25	29.5	30.5	15.6	0.530	0.531	-0.555	0.348
	B16	10	10	100	---	9.81	---	60.8	0	28.0	26.2	16.7	0.598	0.749	-0.121	0.346
	B17	6	6	100	---	7.38	---	43.6	2.75	22.6	18.0	14.8	0.655	0.674	-1.53	0.336
	B19	7	7	100	---	4.67	---	29.7	0	16.3	12.3	9.17	0.563	0.420	-1.27	0.591
	B20	8	8	100	---	5.25	---	112	5.25	44.4	29.8	41.9	0.943	1.11	-0.393	0.033
	B21	8	8	100	---	10.70	---	72.8	2.75	42.5	47.4	20.7	0.488	-0.290	-0.70	0.722
	B23	8	8	100	---	9.97	---	69.0	2.75	25.4	15.7	21.5	0.845	1.52	1.50	0.016
	B24	8	8	100	---	9.28	---	77.3	10.3	29.3	17.8	27.1	0.925	1.34	0.066	0.006
	B25	5	5	100	---	9.12	---	57.5	0	21.5	13.8	20.3	0.942	2.16	4.75	0.004
	B26	8	8	100	---	9.02	---	41.4	0	15.5	11.4	10.8	0.700	2.48	6.43	0.000

Notes:
"---" = not applicable
% = percent
bgs = below ground surface
Freq. = frequency
ft = feet
max = maximum
mg/kg = milligrams per kilogram
p-value = probability value
SW = Shapiro-Wilk

Table J-3
Rank-Transformed Two-Way ANOVA

Area	Parameter	Total Samples	Detect Results	Depth Interval		Boring Location	
				Calculated Probability	Decision	Calculated Probability	Decision
Background	Arsenic	65	65	0.102	No Significant Difference	0.018	Significant Difference
	Lead	65	65	< 0.001	Significant Difference	0.063	No Significant Difference
Site	Arsenic	106	106	< 0.001	Significant Difference	0.012	Significant Difference
	Lead	106	106	< 0.001	Significant Difference	< 0.001	Significant Difference

Notes:
"<" = less than

Table J-4
Kruskal Wallis (Nonparametric) ANOVA Comparisons Between Depth Intervals

Area	Parameter	Total Samples	Detect Results	Calculated Probability	Decision	Depth Intervals Statisticaly Different
Background	Arsenic	65	65	0.181	No Significant Difference	---
	Lead	65	65	< 0.001	Significant Difference	0-5 ft / 5-10 ft 0-5 ft / 10-15 ft 0-5 ft / 15-20 ft
Site	Arsenic	106	106	< 0.001	Significant Difference	0-5 ft / 5-10 ft 0-5 ft / 10-15 ft 5-10 ft / 15-20 ft 10-15 ft / 15-20 ft
	Lead	106	106	< 0.001	Significant Difference	0-5 ft / 10-15 ft 0-5 ft / 15-20 ft 5-10 ft / 10-15 ft 5-10 ft / 15-20 ft

Notes:
"---" = not applicable
"<" = less than
ft = feet

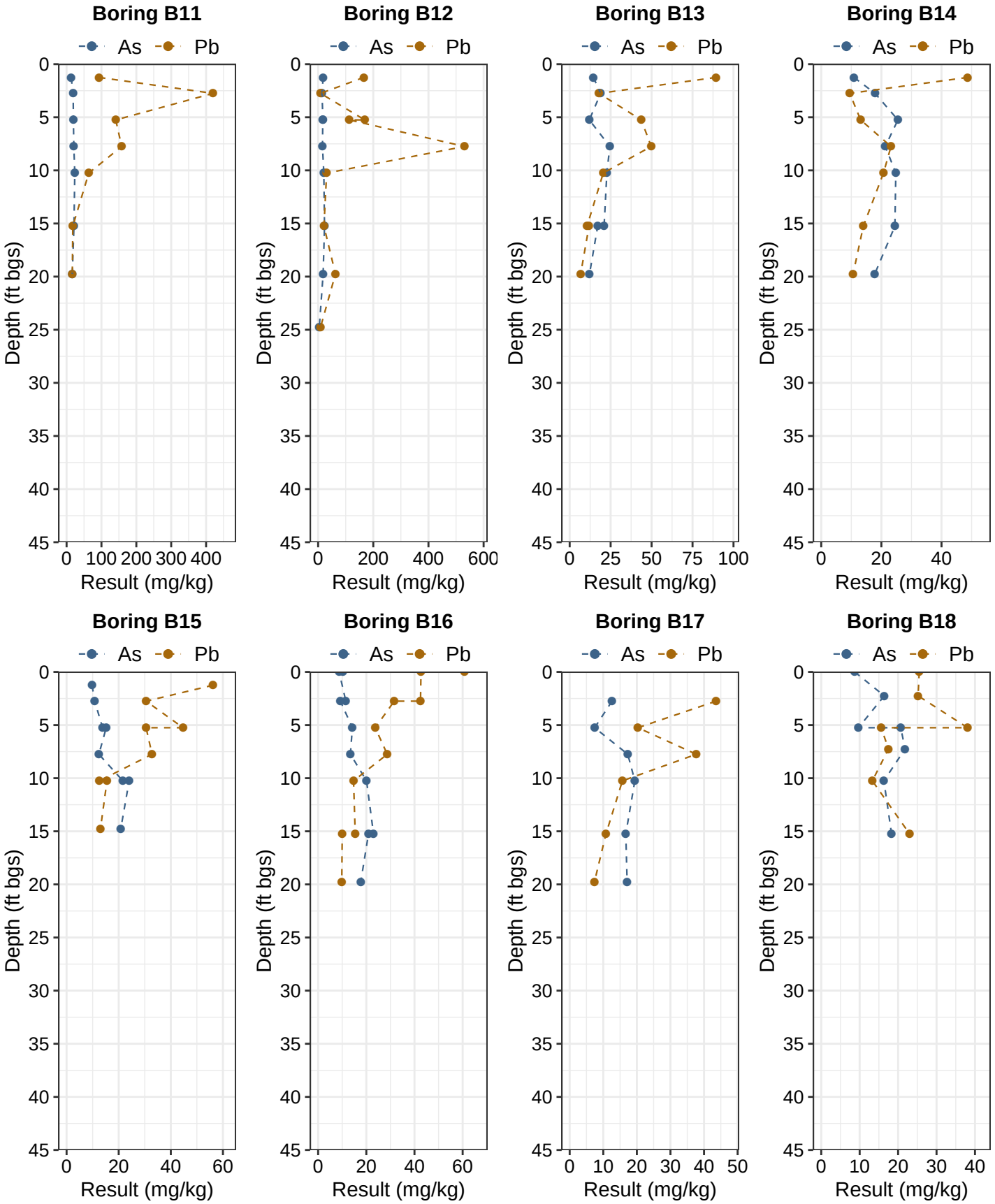
Table J-5
Central Tendency Comparison Test Results by Depth Interval

Parameter	Depth Interval	Site Samples				Background Samples				F-Test for Equal Variance (p-value)	Student's t-test (p-value)	Welch's t-test (p-value)	KS Test (p-value)	Wilcoxon Rank Sum Test (p-value)	Quantile (0.80) Test (p-value)	Are site results greater than background?	Basis of Decision
		No. of Samples	No. of Detects	Percent Detects	Normality Test (p-value)	No. of Samples	No. of Detects	Percent Detects	Normality Test (p-value)								
Arsenic	0 - 5 ft	49	49	100	0.000	31	31	100	0.011	0.021	0.137	0.116	0.208	0.155	0.349	No	KS
Arsenic	5 - 10 ft	29	29	100	0.046	14	14	100	0.136	0.634	0.010	0.014	0.046	0.016	0.030	Yes	WRS
Arsenic	10 - 15 ft	15	15	100	0.001	11	11	100	0.659	0.974	0.148	0.148	0.148	0.097	0.654	No	WRS
Arsenic	15 - 20 ft	13	13	100	0.039	9	9	100	0.240	0.966	0.559	0.559	0.271	0.513	0.450	No	WRS
Lead	0 - 5 ft	49	49	100	0.000	31	31	100	0.000	0.008	0.127	0.104	0.089	0.131	0.165	No	KS
Lead	5 - 10 ft	29	29	100	0.000	14	14	100	0.085	0.000	0.129	0.055	0.049	0.022	0.180	Yes	KS
Lead	10 - 15 ft	15	15	100	0.000	11	11	100	0.620	0.060	0.311	0.296	0.657	0.552	0.918	No	WRS
Lead	15 - 20 ft	13	13	100	0.000	9	9	100	0.732	0.002	0.318	0.291	0.777	0.722	0.833	No	KS

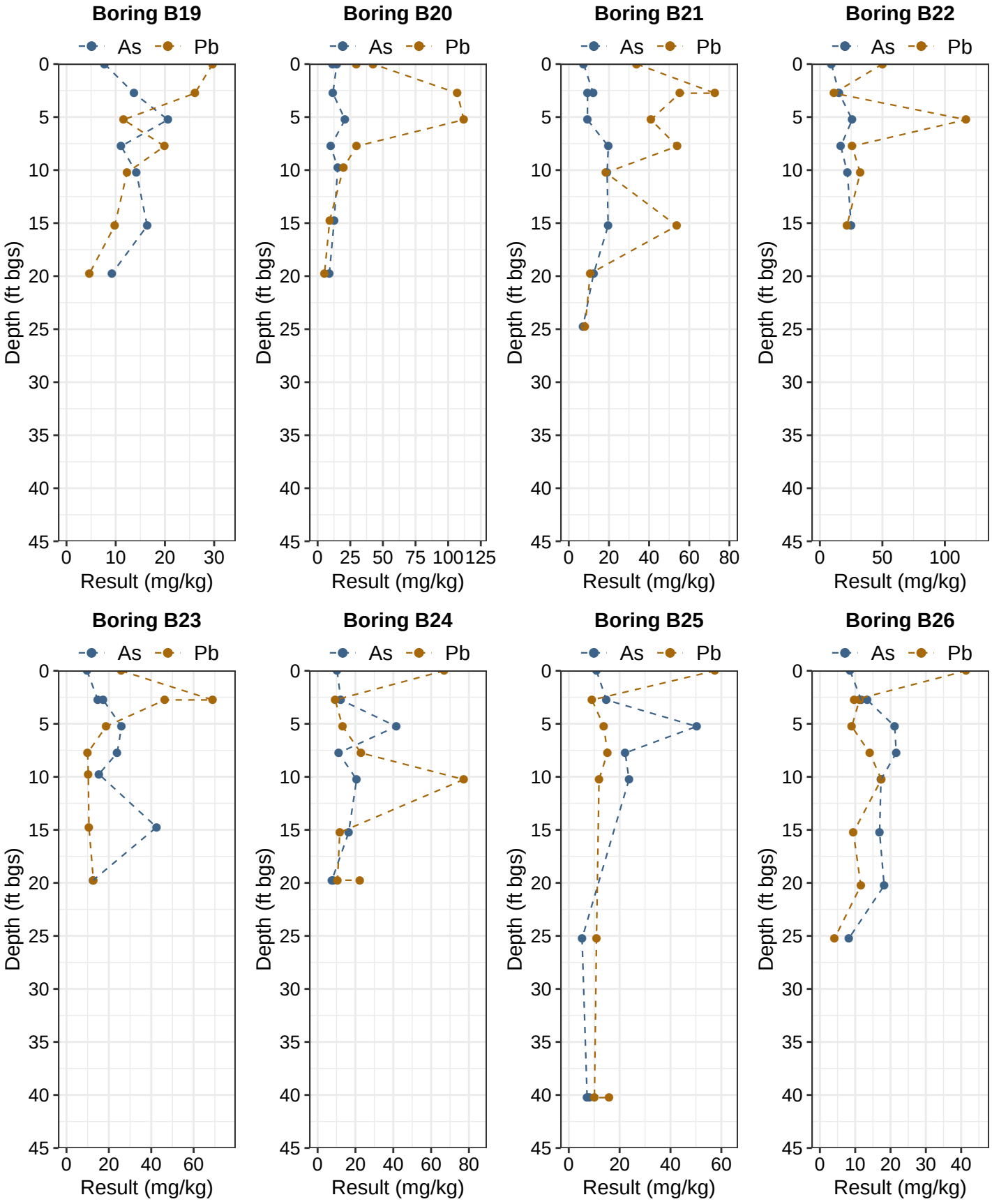
Notes:
"---" = not applicable
KS = Kolmogorov-Smirnov
WRS = Wilcoxon Rank Sum

Figure J-1

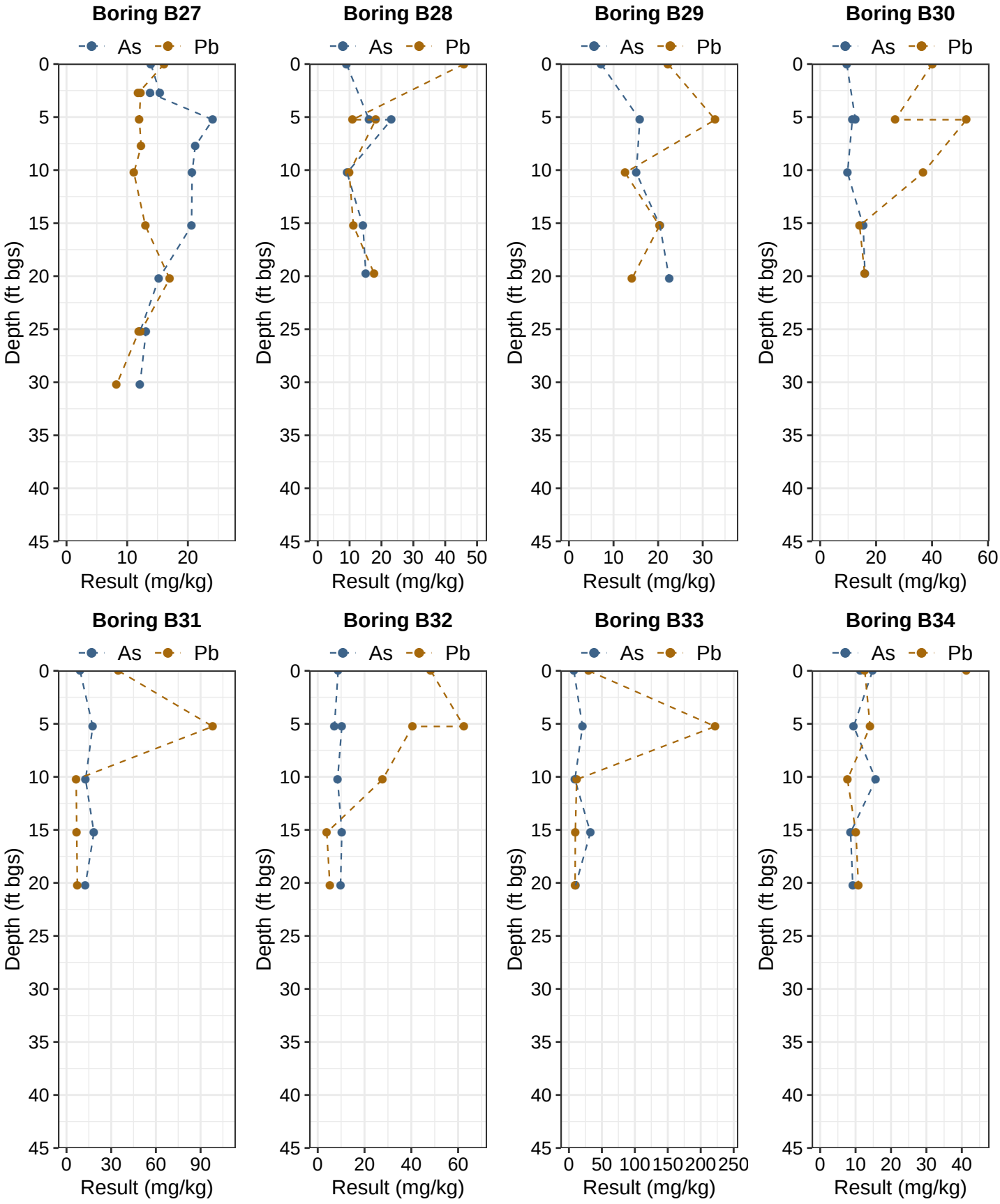
Depth Profiles for Arsenic and Lead
(nondetects plotted using open symbols at one−half the DL)



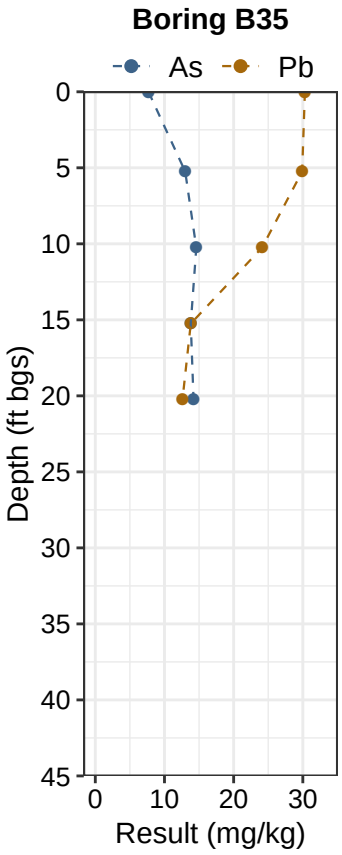
Depth Profiles for Arsenic and Lead
(nondetects plotted using open symbols at one−half the DL)



Depth Profiles for Arsenic and Lead
(nondetects plotted using open symbols at one−half the DL)

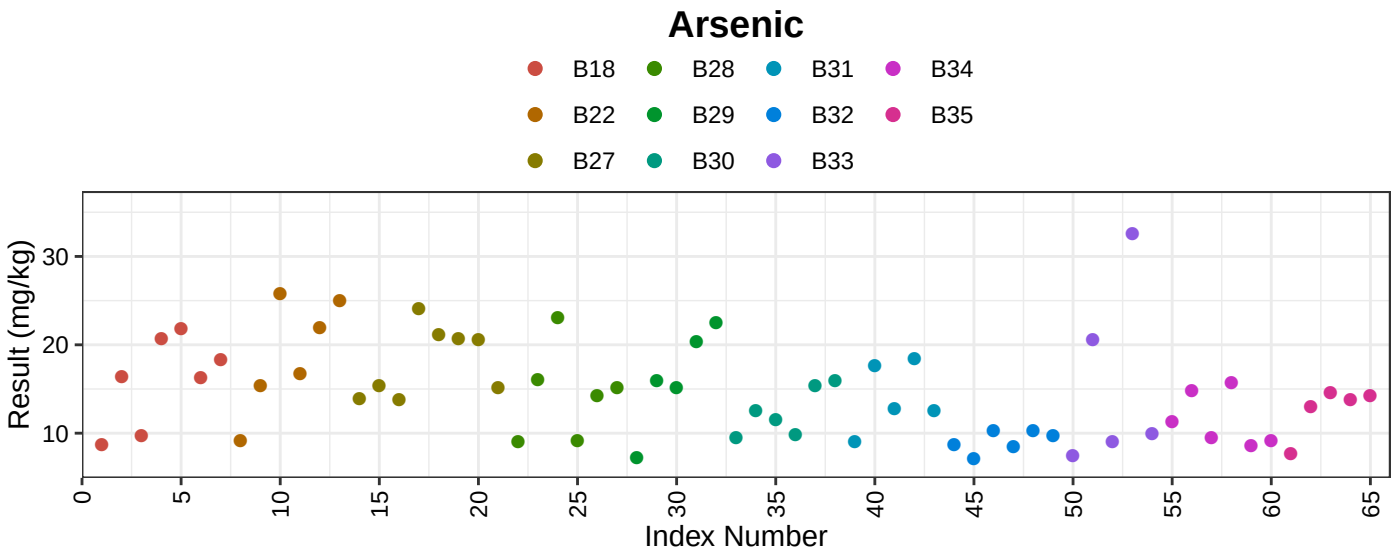


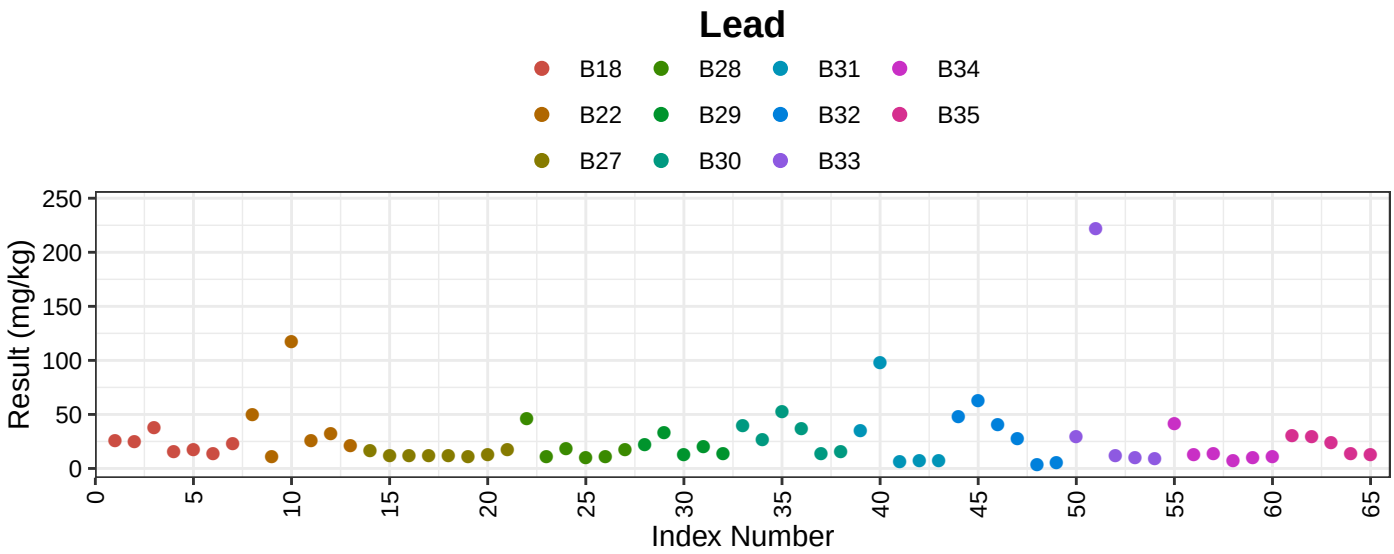
Depth Profiles for Arsenic and Lead
(nondetects plotted using open symbols at one−half the DL)



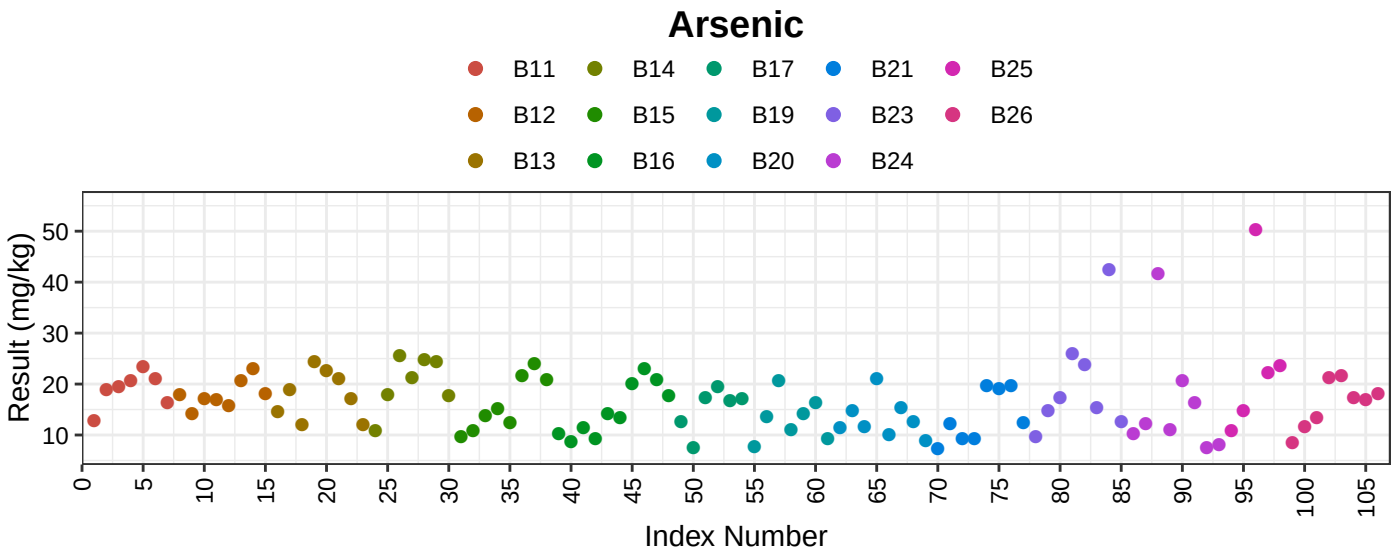
Attachment J-1
Index Plots

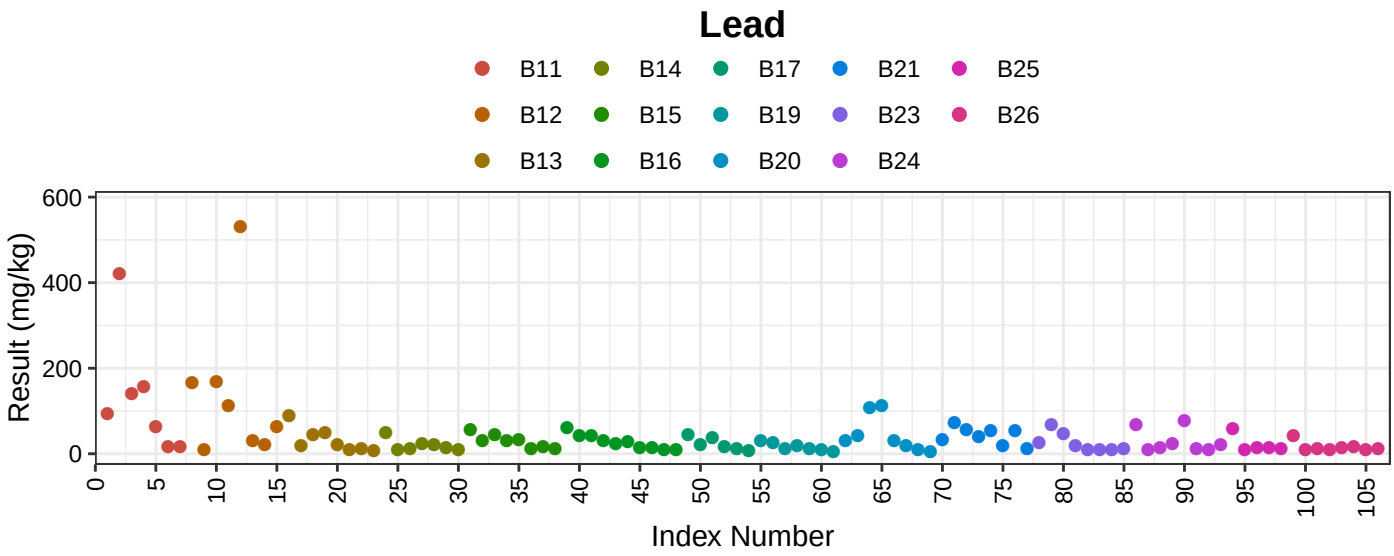
Index Plots for Arsenic and Lead in Background Soil
(open symbols represent nondetect values at one−half the DL)





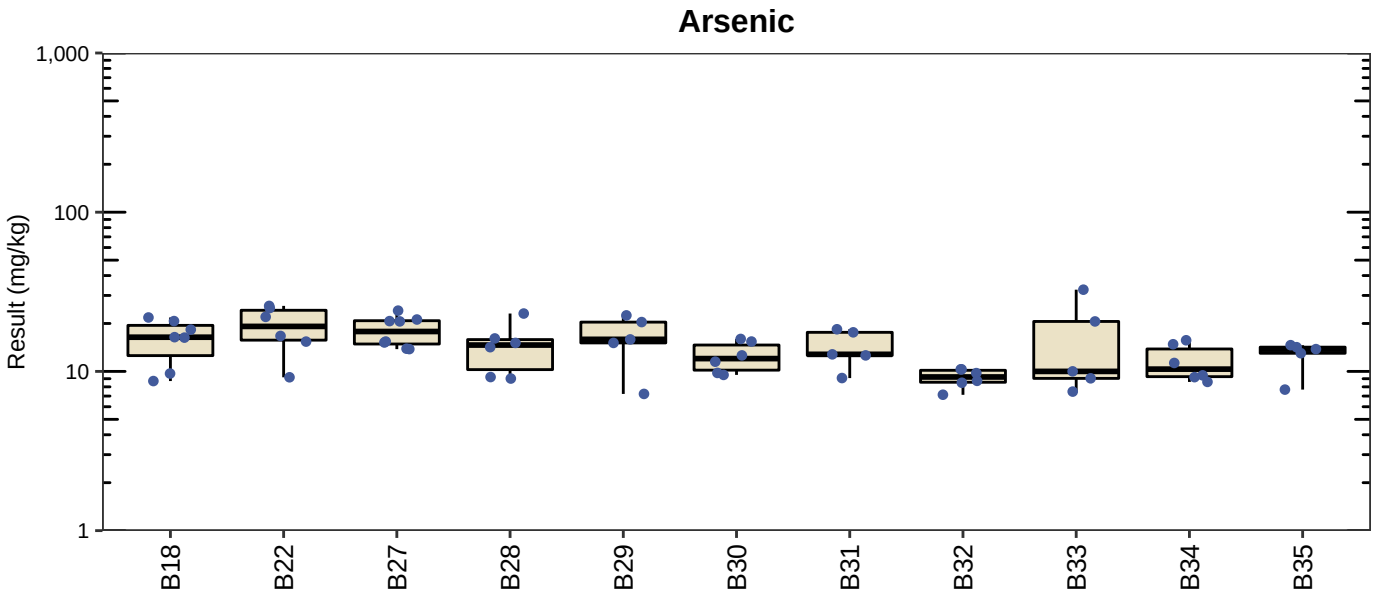
Index Plots for Arsenic and Lead in Site Soil
(open symbols represent nondetect values at one−half the DL)

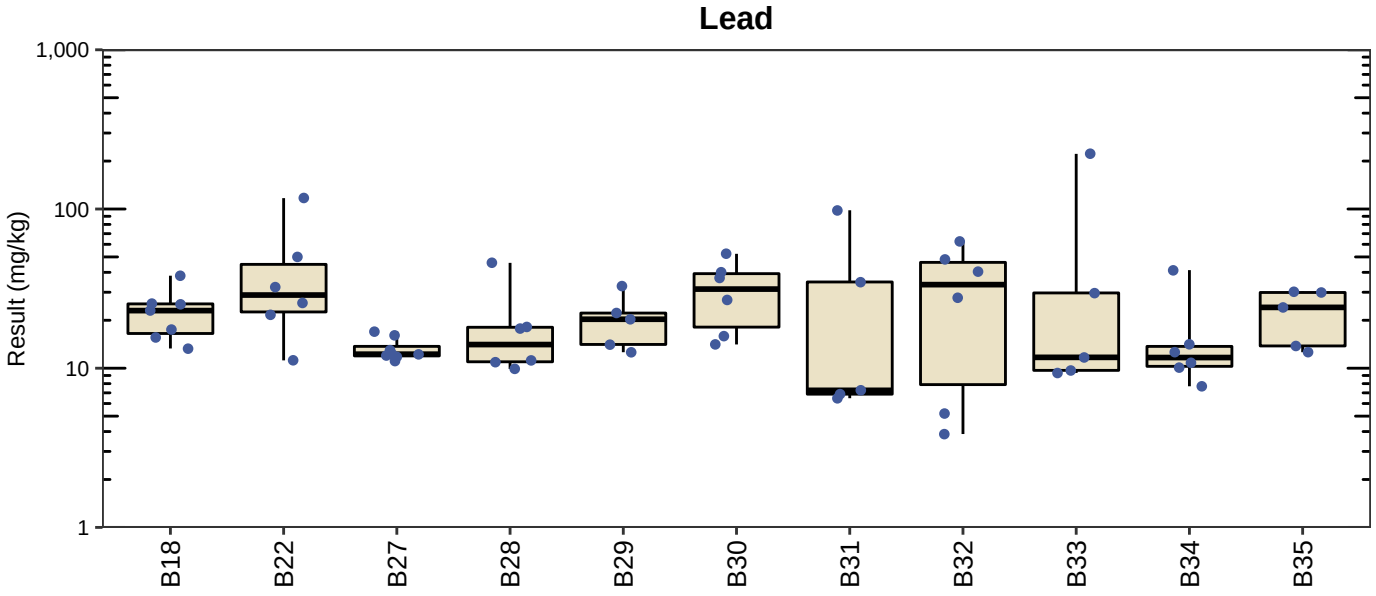




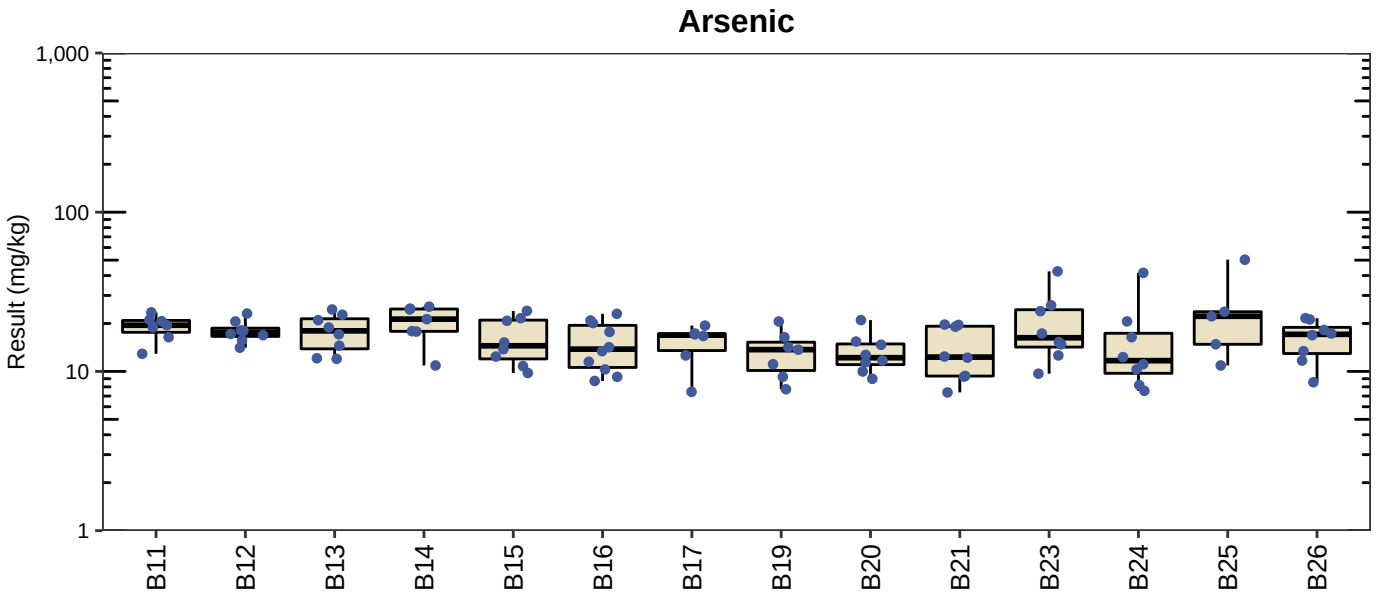
Attachment J-2
Box Plots

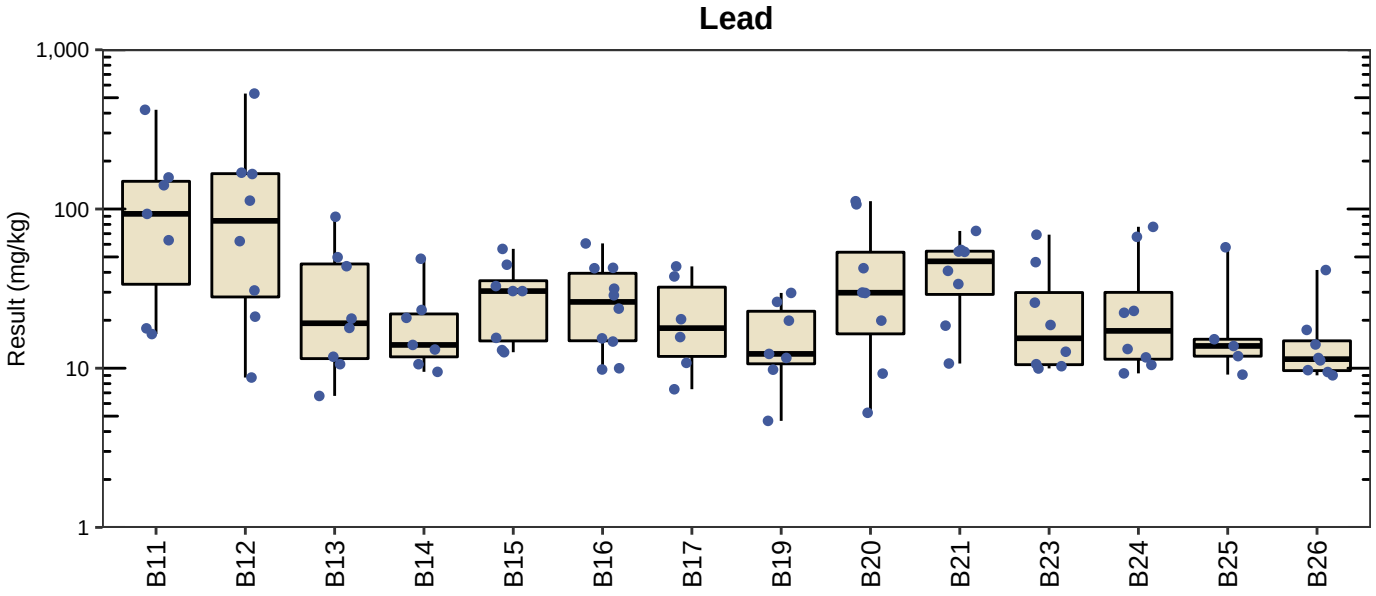
Box Plot of Arsenic and Lead Concentrations in Background Soil
(nondetects plotted at one−half the DL)



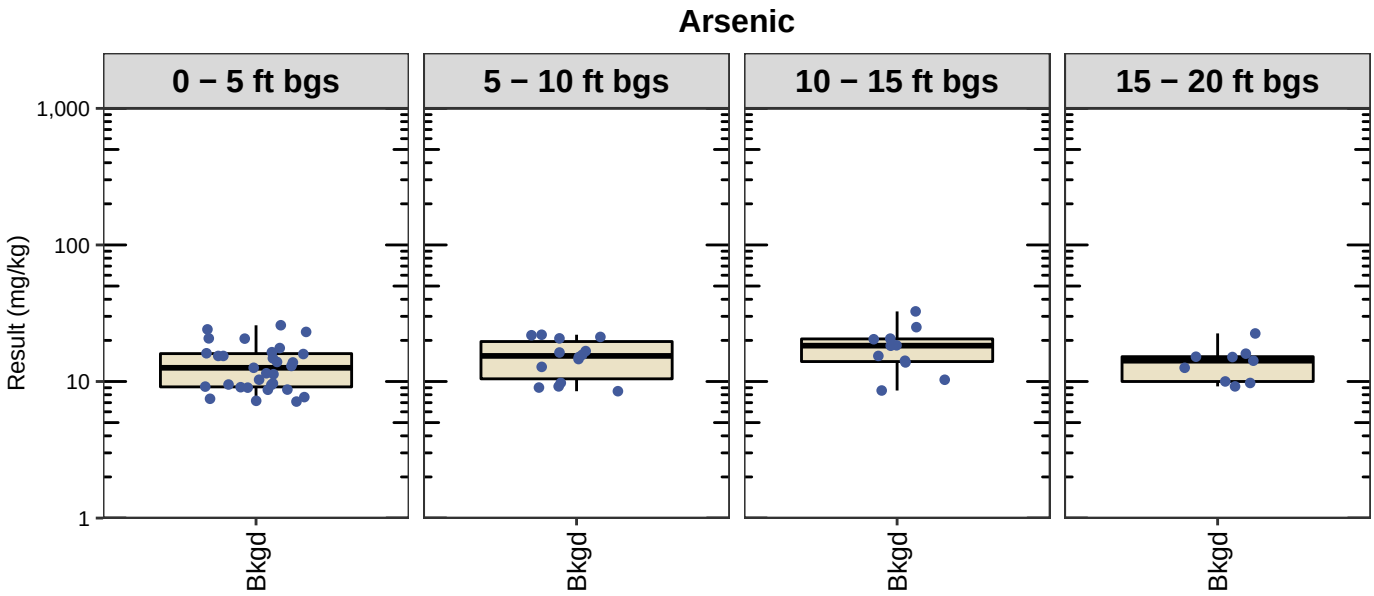


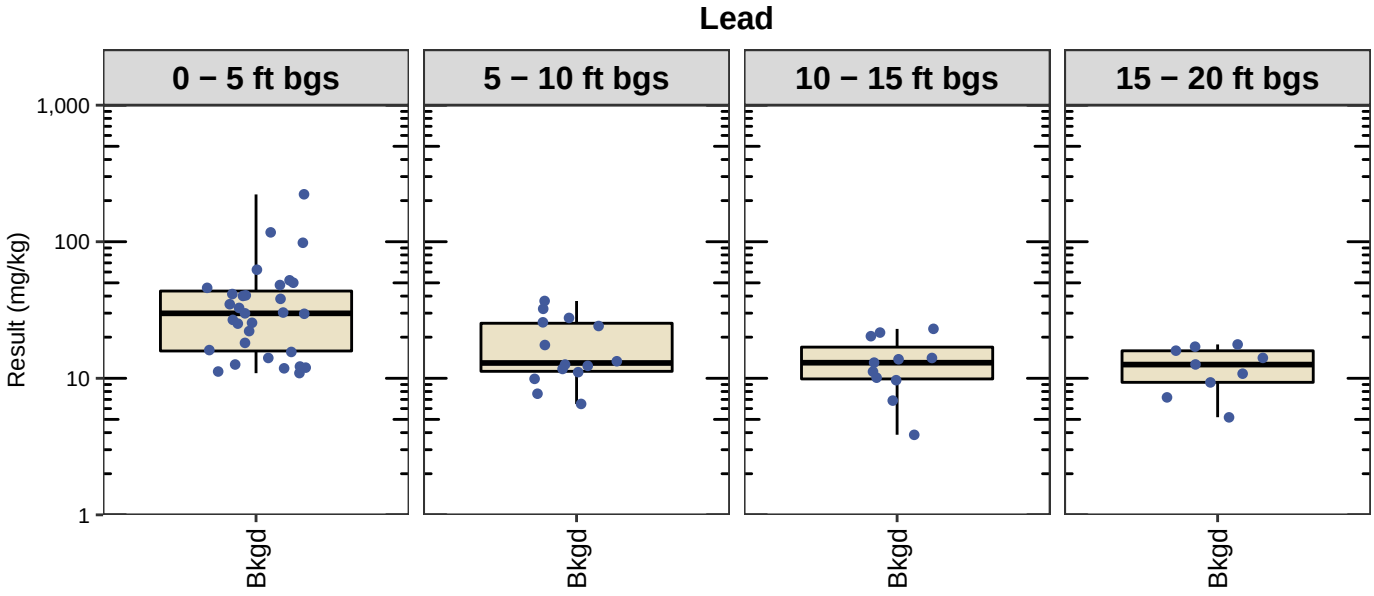
Box Plot of Arsenic and Lead Concentrations in Site Soil
(nondetects plotted at one−half the DL)



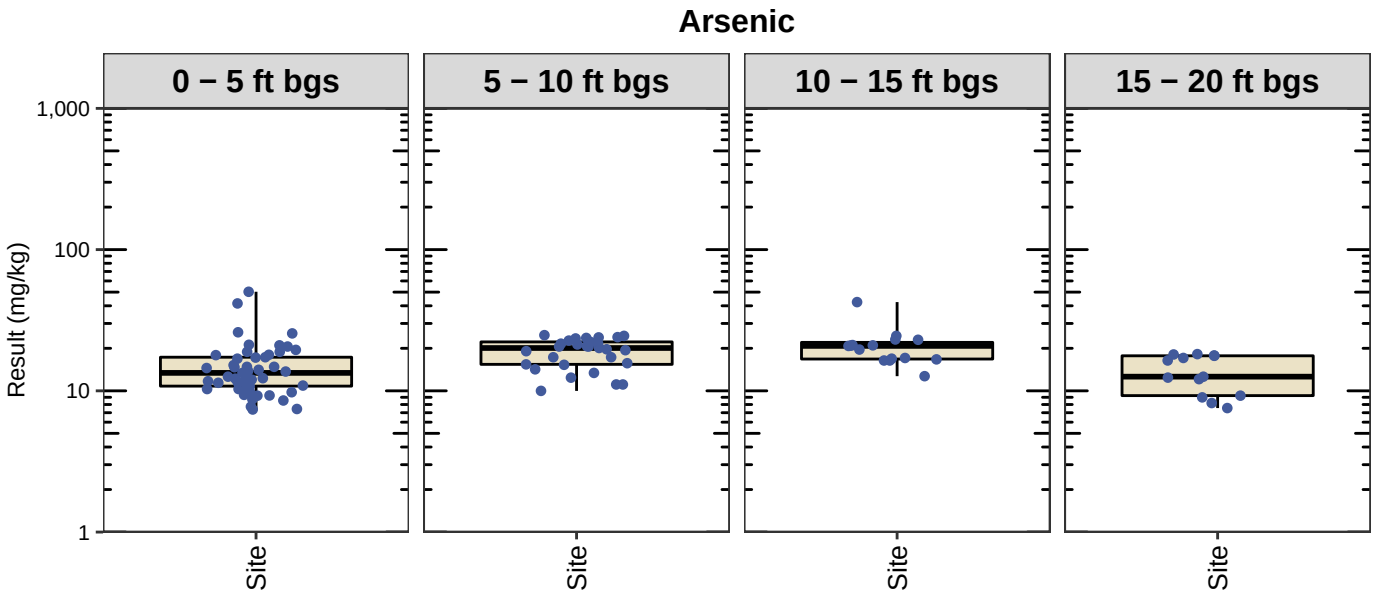


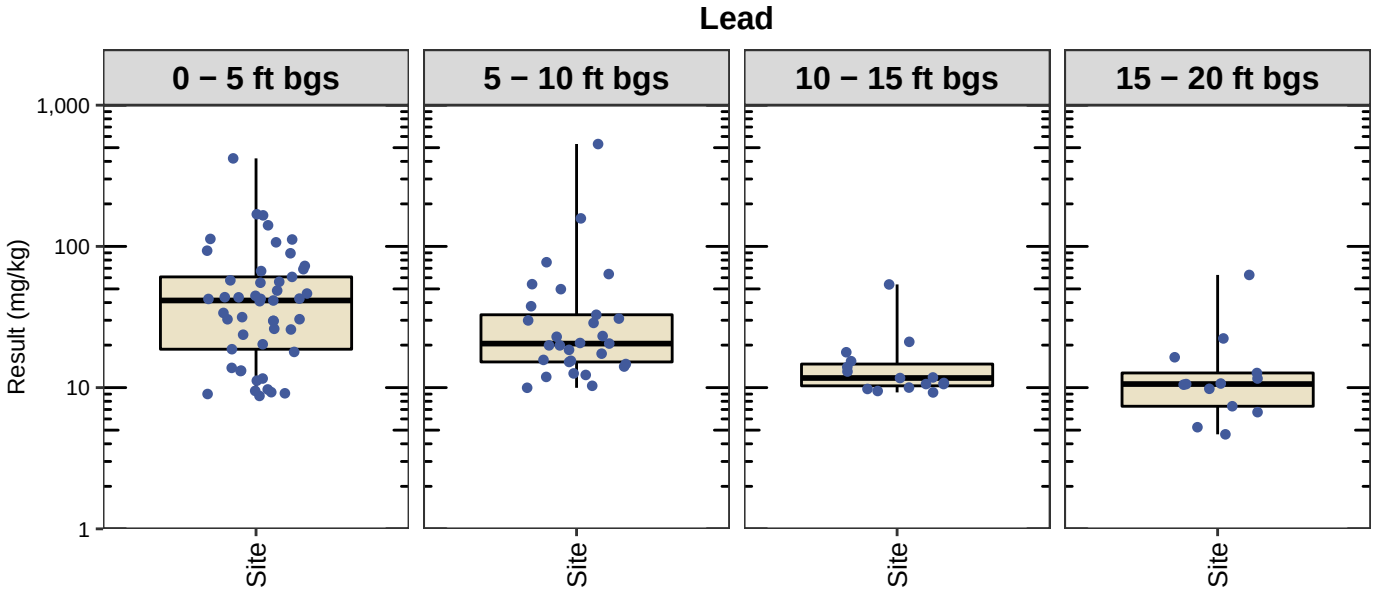
Box Plot of Arsenic and Lead Concentrations in Background Soil
(nondetects plotted at one−half the DL)





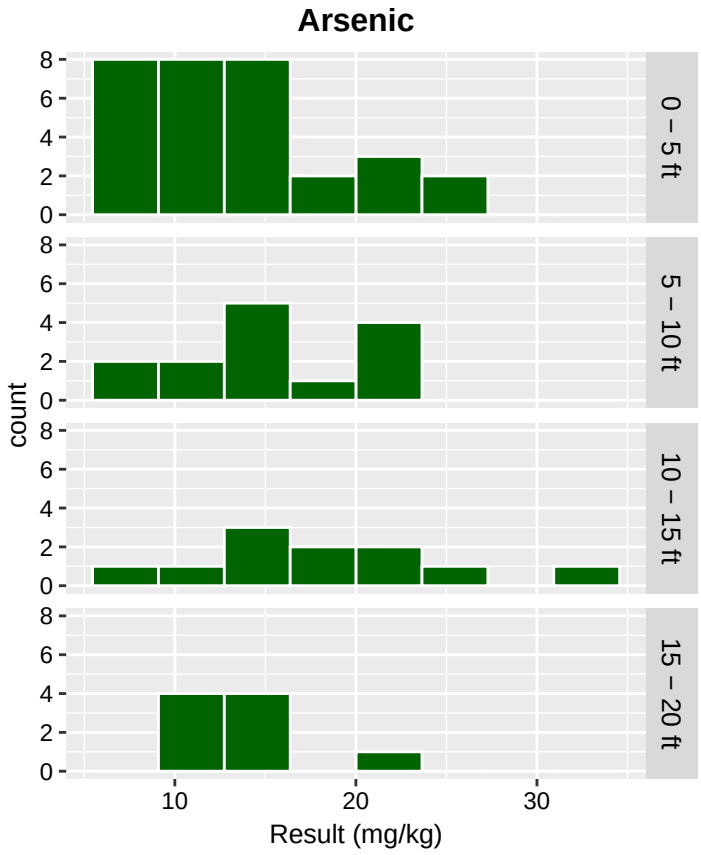
Box Plot of Arsenic and Lead Concentrations in Site Soil
(nondetects plotted at one−half the DL)

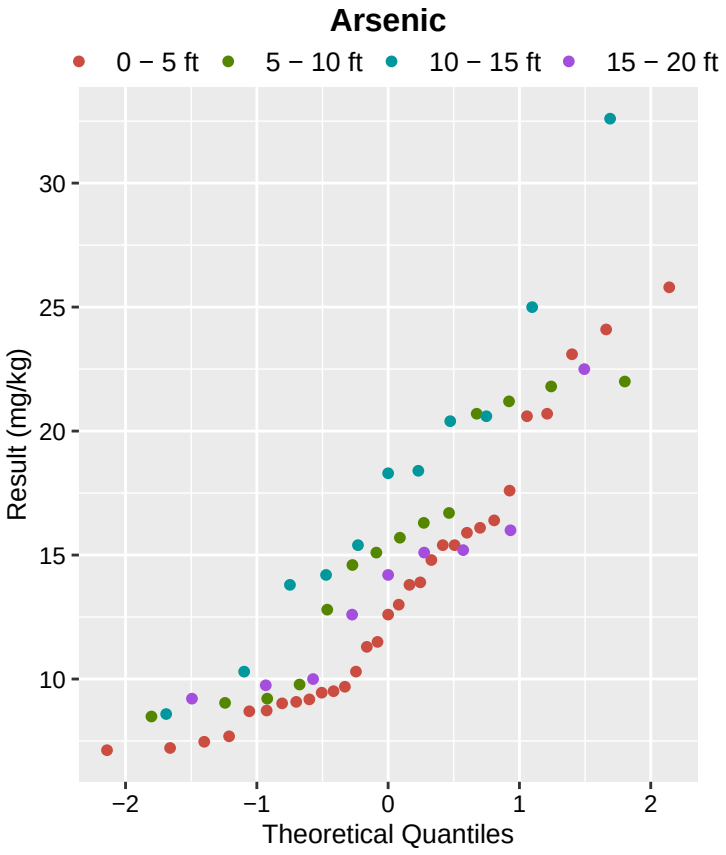


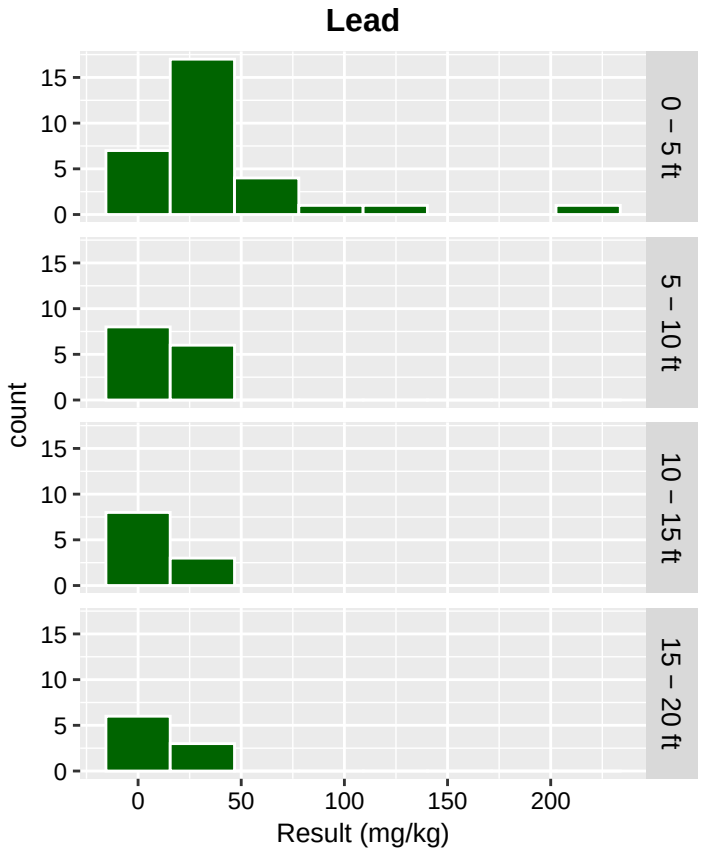


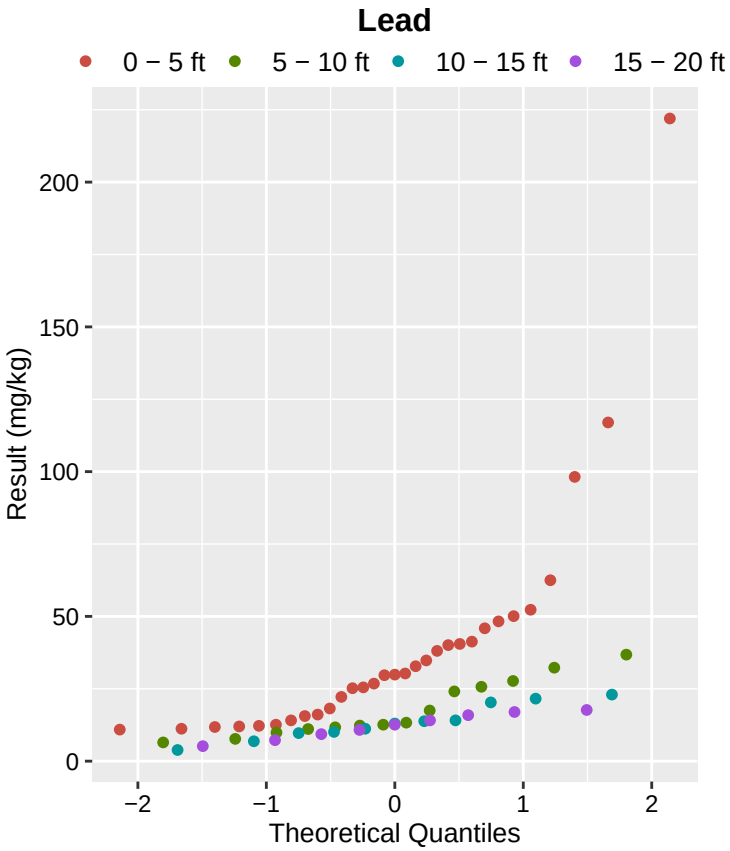
Attachment J-3
Historical Q-Q Plots

Histograms and QQ−Plots for Arsenic and Lead in Background Soil
(nondetects plotted at one−half the DL)

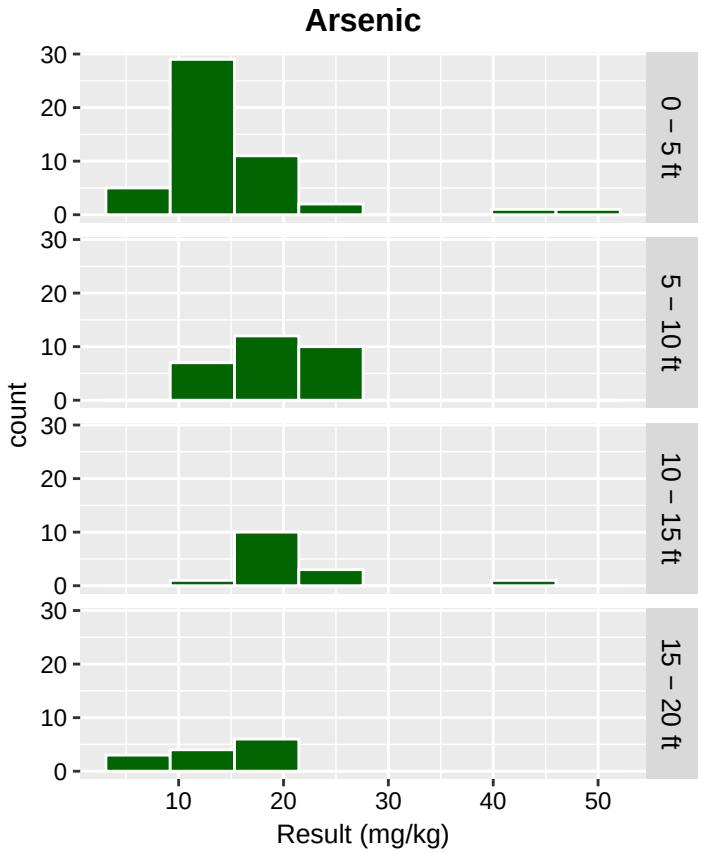


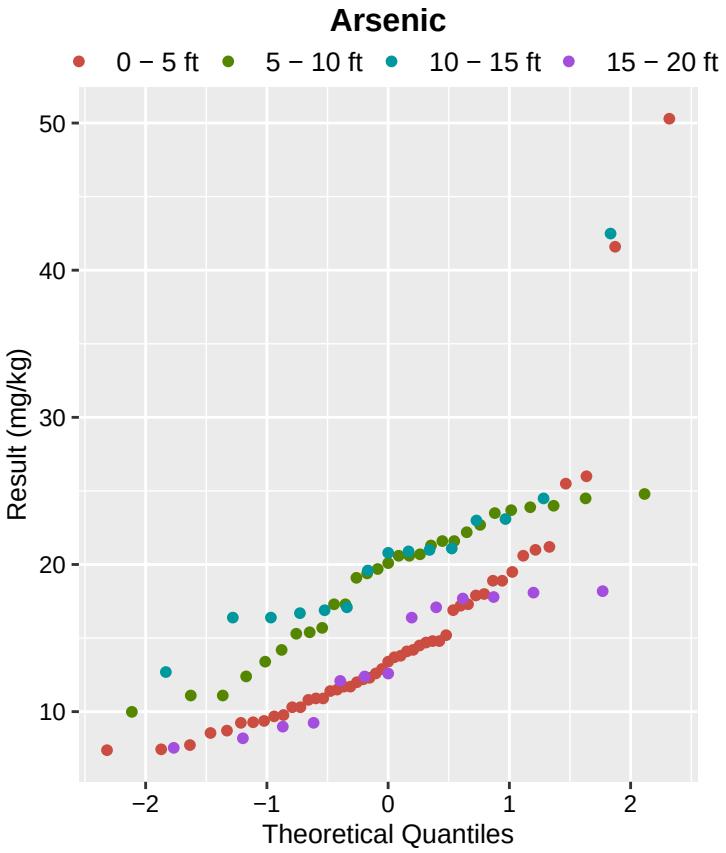


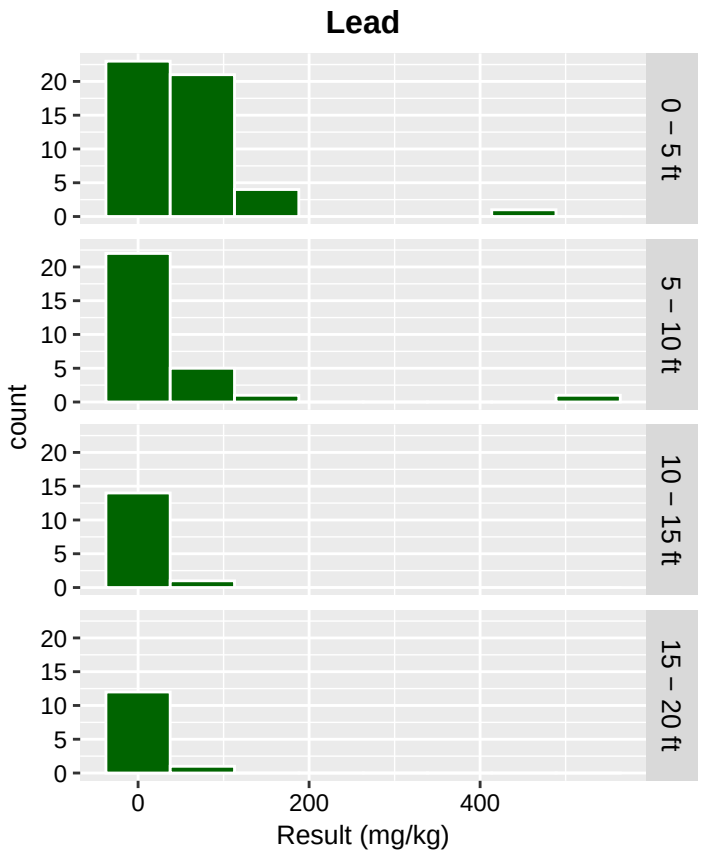


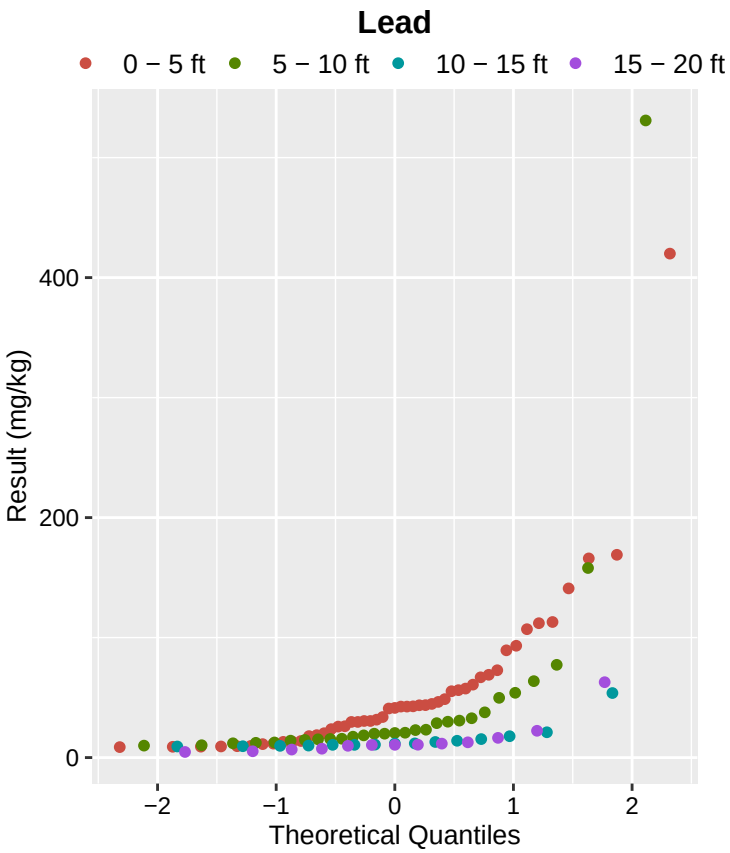


Histograms and QQ−Plots for Arsenic and Lead in Site Soil
(nondetects plotted at one−half the DL)





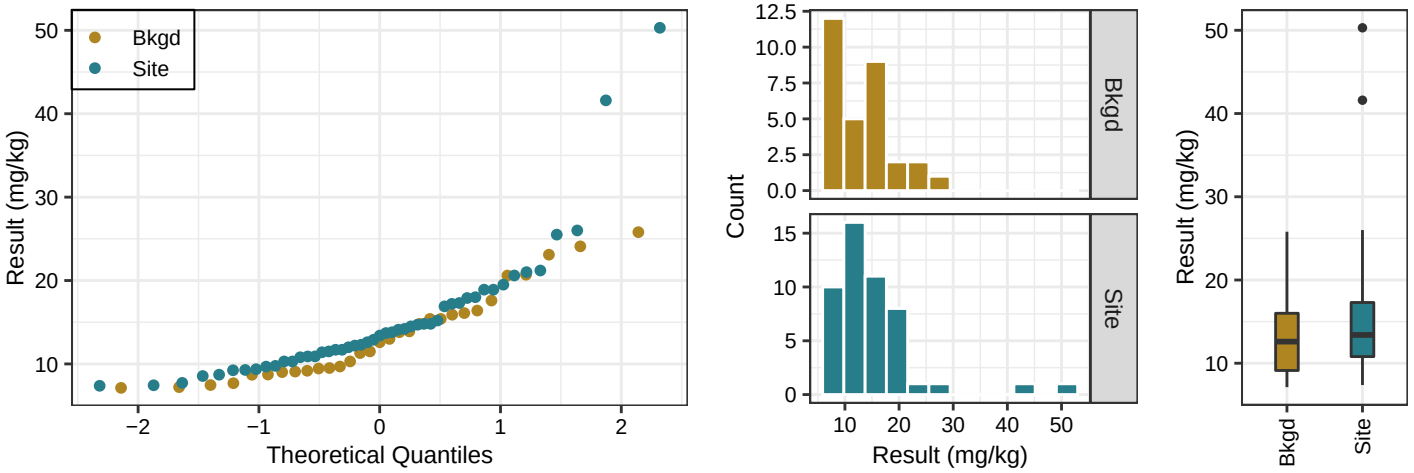




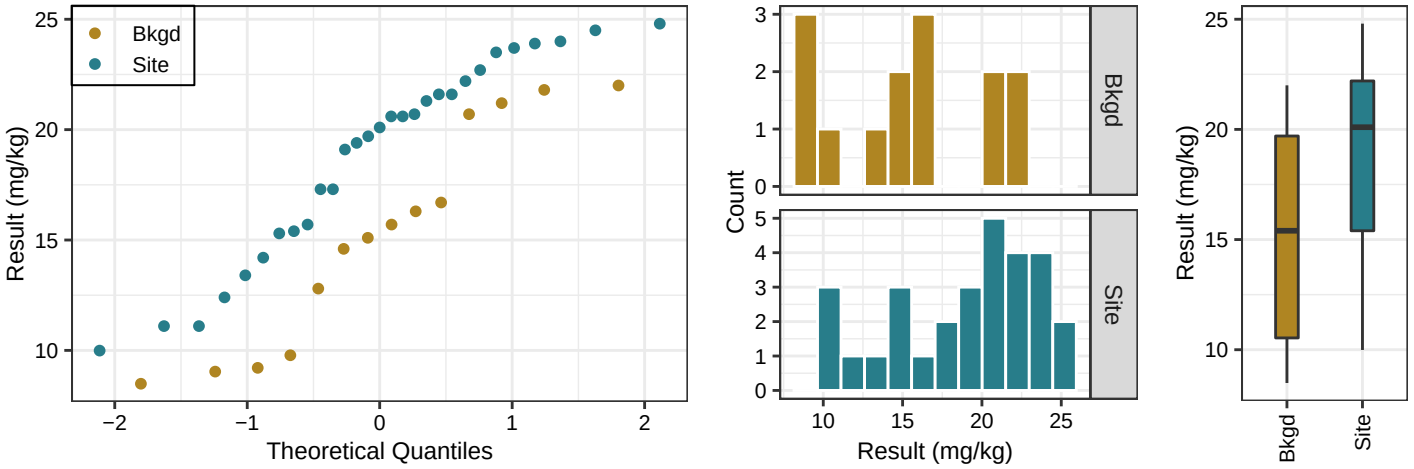
Attachment J-4
Combined Plots

Combined Plots for Arsenic
(background versus site concentrations)

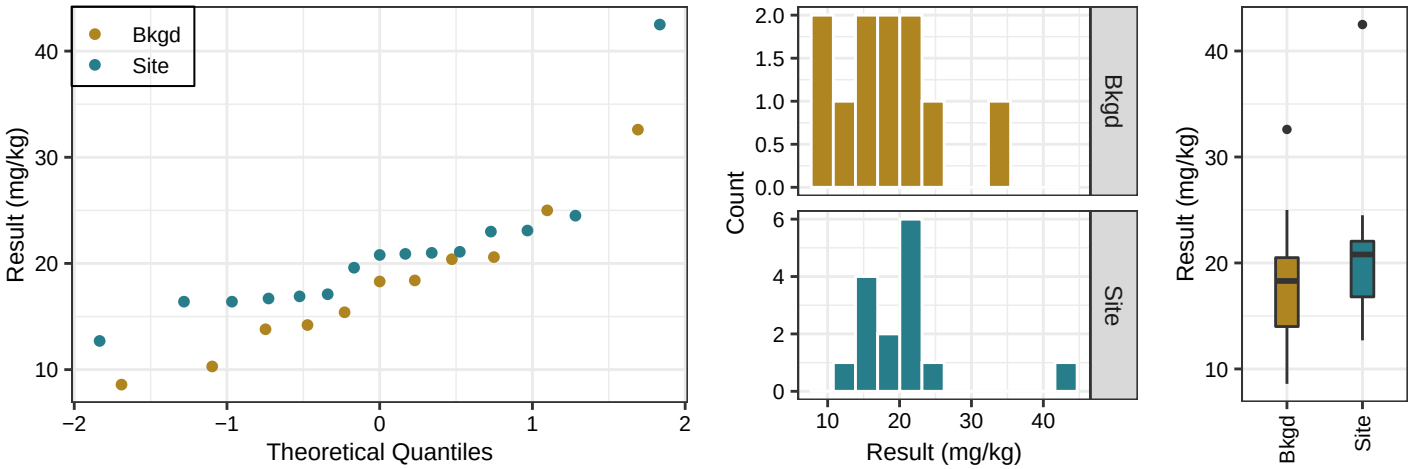
Arsenic: 0 − 5 ft



Arsenic: 5 − 10 ft

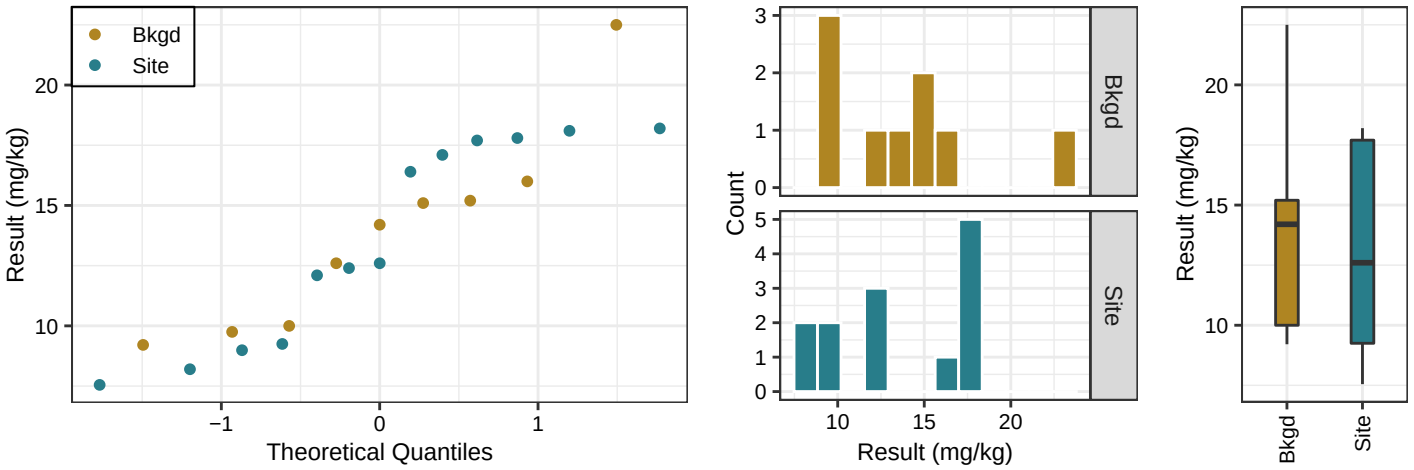


Arsenic: 10 − 15 ft



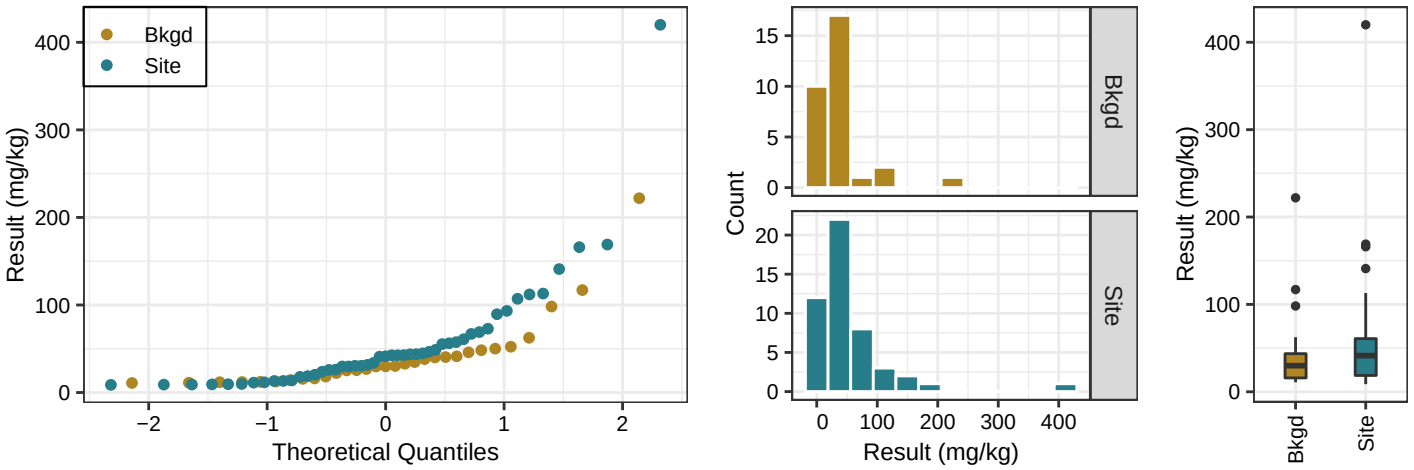
Combined Plots for Arsenic
(background versus site concentrations)

Arsenic: 15 − 20 ft

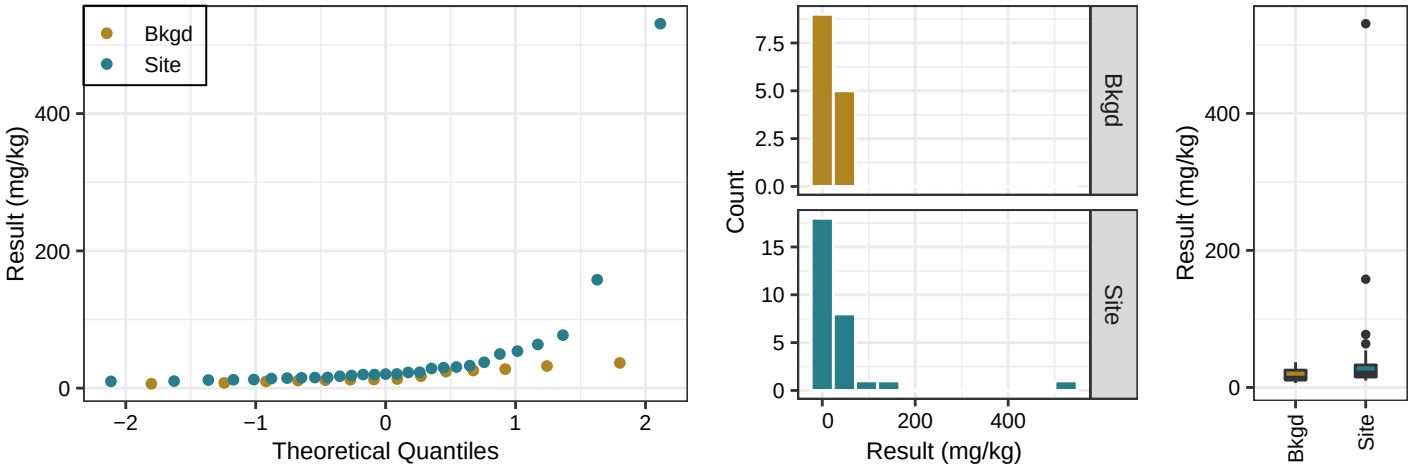


Combined Plots for Lead
(background versus site concentrations)

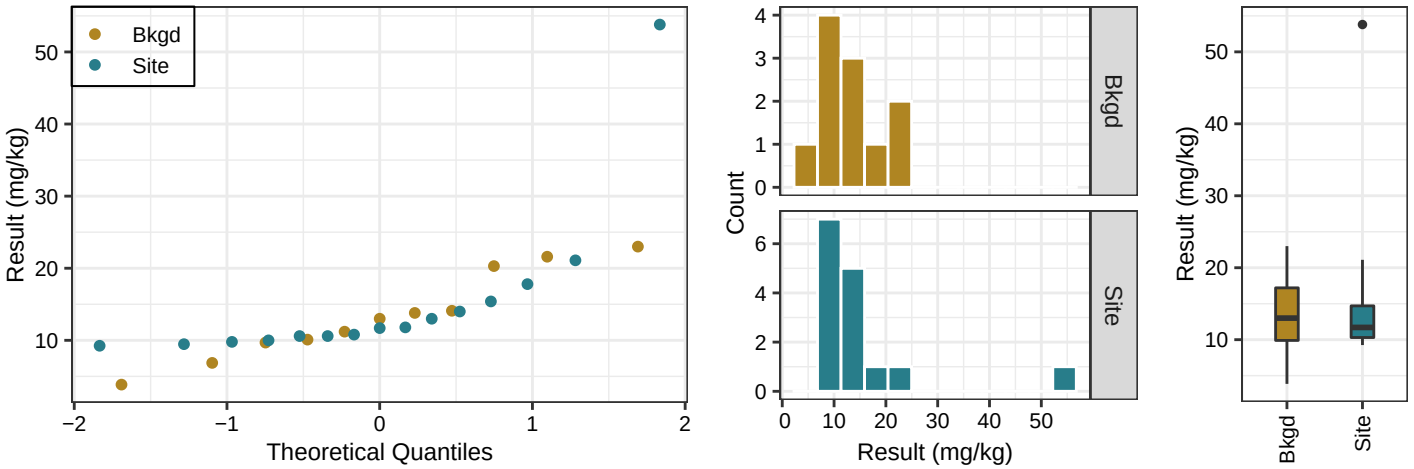
Lead: 0 − 5 ft



Lead: 5 − 10 ft

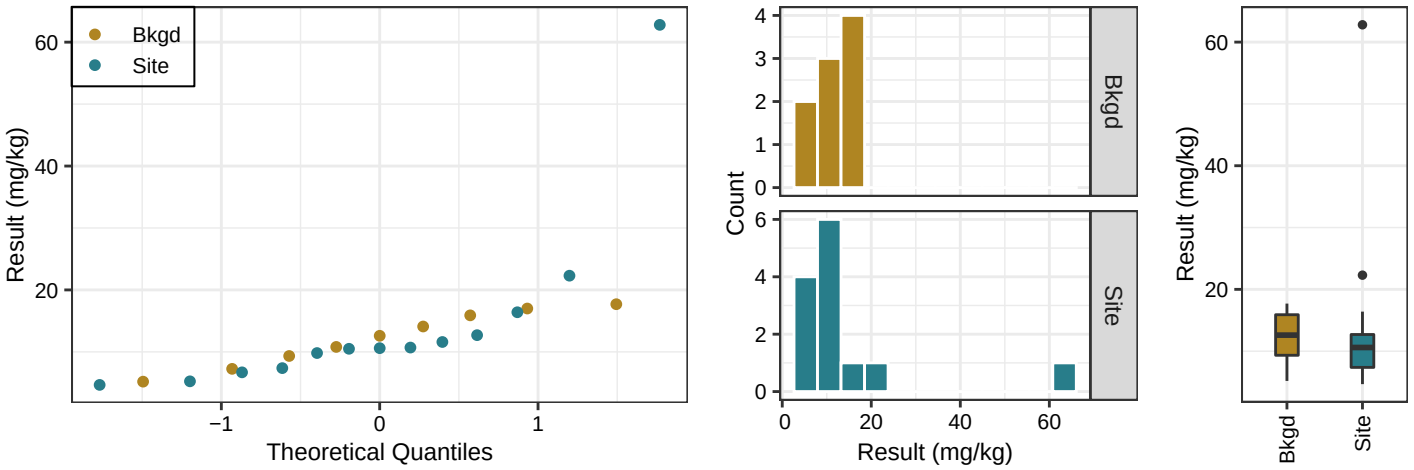


Lead: 10 − 15 ft



Combined Plots for Lead
(background versus site concentrations)

Lead: 15 − 20 ft



Appendix K
Human Health Risk Assessment

Table K-1

Soil Samples Used in Human Health Risk Assessment

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Sample Date	Sample ID	Sample Type	Top Depth (Feet bgs)	Bottom Depth (Feet bgs)	Depth Group (Feet bgs)	Exposure Area
B11	30-Oct-19	D-B11-1.0-1.5	N	1	1.5	0-15	Onsite
B11	30-Oct-19	D-B11-2.5-3.0	N	2.5	3	0-15	Onsite
B11	30-Oct-19	D-B11-5.0-5.5	N	5	5.5	0-15	Onsite
B11	30-Oct-19	D-B11-7.5-8.0	N	7.5	8	0-15	Onsite
B11	30-Oct-19	D-B11-10.0-10.5	N	10	10.5	0-15	Onsite
B11	30-Oct-19	D-B11-15.0-15.5	N	15	15.5	>15	Onsite
B11	30-Oct-19	D-B11-19.5-20.0	N	19.5	20	>15	Onsite
B12	31-Oct-19	D-B12-1.0-1.5	N	1	1.5	0-15	Onsite
B12	31-Oct-19	D-B12-2.5-3.0	N	2.5	3	0-15	Onsite
B12	31-Oct-19	D-B12-5.0-5.5	N	5	5.5	0-15	Onsite
B12	31-Oct-19	D-FD02-103119	FD	5	5.5	0-15	Onsite
B12	31-Oct-19	D-B12-7.5-8.0	N	7.5	8	0-15	Onsite
B12	31-Oct-19	D-B12-10.0-10.5	N	10	10.5	0-15	Onsite
B12	31-Oct-19	D-B12-15.0-15.5	N	15	15.5	>15	Onsite
B12	31-Oct-19	D-B12-19.5-20	N	19.5	20	>15	Onsite
B12	31-Oct-19	D-B12-24.5-25.0	N	24.5	25	>15	Onsite
B13	31-Oct-19	D-B13-1.0-1.5	N	1	1.5	0-15	Onsite
B13	31-Oct-19	D-B13-2.5-3.0	N	2.5	3	0-15	Onsite
B13	31-Oct-19	D-B13-5.0-5.5	N	5	5.5	0-15	Onsite
B13	31-Oct-19	D-B13-7.5-8.0	N	7.5	8	0-15	Onsite
B13	31-Oct-19	D-B13-10.0-10.5	N	10	10.5	0-15	Onsite
B13	31-Oct-19	D-B13-15.0-15.5	N	15	15.5	>15	Onsite
B13	31-Oct-19	D-FD01-103119	FD	15	15.5	>15	Onsite
B13	31-Oct-19	D-B13-19.5-20.0	N	19.5	20	>15	Onsite
B14	29-Oct-19	D-B14-1.0-1.5	N	1	1.5	0-15	Onsite
B14	29-Oct-19	D-B14-2.5-3.0	N	2.5	3	0-15	Onsite
B14	29-Oct-19	D-B14-5.0-5.5	N	5	5.5	0-15	Onsite
B14	29-Oct-19	D-B14-7.5-8.0	N	7.5	8	0-15	Onsite
B14	29-Oct-19	D-B14-10.0-10.5	N	10	10.5	0-15	Onsite
B14	29-Oct-19	D-B14-15.0-15.5	N	15	15.5	>15	Onsite
B14	29-Oct-19	D-B14-19.5-20.0	N	19.5	20	>15	Onsite
B15	01-Nov-19	D-B15-1.0-1.5	N	1	1.5	0-15	Onsite
B15	01-Nov-19	D-B15-2.5-3.0	N	2.5	3	0-15	Onsite
B15	01-Nov-19	D-B15-5.0-5.5	N	5	5.5	0-15	Onsite
B15	01-Nov-19	D-FD03-110119	FD	5	5.5	0-15	Onsite
B15	01-Nov-19	D-B15-7.5-8.0	N	7.5	8	0-15	Onsite
B15	01-Nov-19	D-B15-10.0-10.5	N	10	10.5	0-15	Onsite
B15	01-Nov-19	D-FD04-110119	FD	10	10.5	0-15	Onsite
B15	01-Nov-19	D-B15-14.5-15.0	N	14.5	15	0-15	Onsite
B16	27-Oct-19	D-B16-0-102719	N	0	0.25	0-15	Onsite
B16	29-Oct-19	D-B16-2.5-3.0	N	2.5	3	0-15	Onsite
B16	29-Oct-19	D-FD01-102919	FD	5	5.5	0-15	Onsite
B16	29-Oct-19	D-B16-5.0-5.5	N	5	5.5	0-15	Onsite
B16	29-Oct-19	D-B16-7.5-8.0	N	7.5	8	0-15	Onsite
B16	29-Oct-19	D-B16-10.0-10.5	N	10	10.5	0-15	Onsite
B16	29-Oct-19	D-B16-15.0-15.5	N	15	15.5	>15	Onsite
B16	29-Oct-19	D-FD02-102919	FD	15	15.5	>15	Onsite
B16	29-Oct-19	D-B16-19.5-20.0	N	19.5	20	>15	Onsite
B16	29-Oct-19	D-FD01-102919	FD	2.5	3	0-15	Onsite
B16	27-Oct-19	D-B17-0-102719	N	0	0.25	0-15	Onsite
B17	27-Oct-19	D-B17-0-102719	N	0	0.25	0-15	Onsite
B17	30-Oct-19	D-B17-2.5-3.0	N	2.5	3	0-15	Onsite
B17	30-Oct-19	D-B17-5.0-5.5	N	5	5.5	0-15	Onsite
B17	30-Oct-19	D-B17-7.5-8.0	N	7.5	8	0-15	Onsite

Table K-1

Soil Samples Used in Human Health Risk Assessment

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Sample Date	Sample ID	Sample Type	Top Depth (Feet bgs)	Bottom Depth (Feet bgs)	Depth Group (Feet bgs)	Exposure Area
B17	30-Oct-19	D-B17-10.0-10.5	N	10	10.5	0-15	Onsite
B17	30-Oct-19	D-B17-15.0-15.5	N	15	15.5	>15	Onsite
B17	30-Oct-19	D-B17-19.5-20.0	N	19.5	20	>15	Onsite
B18	27-Oct-19	D-B18-0-102719	N	0	0.25	0-15	Background (Offsite)
B18	28-Oct-19	D-B18-2.0-2.5	N	2.5	3	0-15	Background (Offsite)
B18	28-Oct-19	D-B18-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B18	28-Oct-19	D-FD03-102819	FD	5	5.5	0-15	Background (Offsite)
B18	28-Oct-19	D-B18-7.0-7.5	N	7	7.5	0-15	Background (Offsite)
B18	05-Nov-19	D-B18-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B18	05-Nov-19	D-B18-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B18	28-Oct-19	D-B18-2.0-2.5	N	2	2.5	0-15	Background (Offsite)
B19	27-Oct-19	D-B19-0-102719	N	0	0.25	0-15	Onsite
B19	01-Nov-19	D-B19-2.5-3.0	N	2.5	3	0-15	Onsite
B19	01-Nov-19	D-B19-5.0-5.5	N	5	5.5	0-15	Onsite
B19	01-Nov-19	D-B19-7.5-8.0	N	7.5	8	0-15	Onsite
B19	02-Nov-19	D-B19-10.0-10.5	N	10	10.5	0-15	Onsite
B19	02-Nov-19	D-B19-15.0-15.5	N	15	15.5	>15	Onsite
B19	02-Nov-19	D-B19-19.5-20.0	N	19.5	20	>15	Onsite
B20	27-Oct-19	D-B20-0-102719	N	0	0.25	0-15	Onsite
B20	27-Oct-19	D-FD01-102719	FD	0	0.25	0-15	Onsite
B20	30-Oct-19	D-B20-2.5-3.0	N	2.5	3	0-15	Onsite
B20	30-Oct-19	D-B20-5.0-5.5	N	5	5.5	0-15	Onsite
B20	02-Nov-19	D-B20-7.5-8.0	N	7.5	8	0-15	Onsite
B20	02-Nov-19	D-B20-9.5-10.0	N	9.5	10	0-15	Onsite
B20	02-Nov-19	D-B20-14.5-15.0	N	14.5	15	0-15	Onsite
B20	02-Nov-19	D-B20-19.5-20.0	N	19.5	20	>15	Onsite
B21	27-Oct-19	D-B21-0-102719	N	0	0.25	0-15	Onsite
B21	01-Nov-19	D-B21-2.5-3.0	N	2.5	3	0-15	Onsite
B21	01-Nov-19	D-FD02-110119	FD	2.5	3	0-15	Onsite
B21	01-Nov-19	D-B21-5.0-5.5	N	5	5.5	0-15	Onsite
B21	01-Nov-19	D-B21-7.5-8.0	N	7.5	8	0-15	Onsite
B21	01-Nov-19	D-B21-10.0-10.5	N	10	10.5	0-15	Onsite
B21	01-Nov-19	D-B21-15.0-15.5	N	15	15.5	>15	Onsite
B21	01-Nov-19	D-B21-19.5-20.0	N	19.5	20	>15	Onsite
B21	01-Nov-19	D-B21-24.5-25.0	N	24.5	25	>15	Onsite
B22	27-Oct-19	D-B22-0-102719	N	0	0.25	0-15	Background (Offsite)
B22	29-Oct-19	D-B22-2.5-3.0	N	2.5	3	0-15	Background (Offsite)
B22	29-Oct-19	D-B22-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B22	29-Oct-19	D-B22-7.5-8.0	N	7.5	8	0-15	Background (Offsite)
B22	29-Oct-19	D-B22-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B22	29-Oct-19	D-B22-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B23	27-Oct-19	D-B23-0-102719	N	0	0.25	0-15	Onsite
B23	31-Oct-19	D-B23-25-3.0	N	2.5	3	0-15	Onsite
B23	31-Oct-19	D-FD03-103119	FD	2.5	3	0-15	Onsite
B23	31-Oct-19	D-B23-5.0-5.5	N	5	5.5	0-15	Onsite
B23	31-Oct-19	D-B23-7.5-8.0	N	7.5	8	0-15	Onsite
B23	31-Oct-19	D-B23-9.5-10.0	N	9.5	10	0-15	Onsite
B23	31-Oct-19	D-B23-14.5-15.0	N	14.5	15	0-15	Onsite
B23	31-Oct-19	D-B23-19.5-20.0	N	19.5	20	>15	Onsite
B24	28-Oct-19	D-B24-0-102719	N	0	0.25	0-15	Onsite
B24	30-Oct-19	D-B24-2.5-3.0	N	2.5	3	0-15	Onsite
B24	30-Oct-19	D-B24-5.0-5.5	N	5	5.5	0-15	Onsite
B24	30-Oct-19	D-B24-7.5-8.0	N	7.5	8	0-15	Onsite
B24	30-Oct-19	D-B24-10.0-10.5	N	10	10.5	0-15	Onsite

Table K-1

Soil Samples Used in Human Health Risk Assessment

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Sample Date	Sample ID	Sample Type	Top Depth (Feet bgs)	Bottom Depth (Feet bgs)	Depth Group (Feet bgs)	Exposure Area
B24	30-Oct-19	D-B24-15.0-15.5	N	15	15.5	>15	Onsite
B24	30-Oct-19	D-B24-19.5-20.0	N	19.5	20	>15	Onsite
B24	30-Oct-19	D-FD01-103019	FD	19.5	20	>15	Onsite
B25	27-Oct-19	D-B25-0-102719	N	0	0.25	0-15	Onsite
B25	30-Oct-19	D-B25-2.5-3.0	N	2.5	3	0-15	Onsite
B25	30-Oct-19	D-B25-5.0-5.5	N	5	5.5	0-15	Onsite
B25	30-Oct-19	D-B25-7.5-8.0	N	7.5	8	0-15	Onsite
B25	31-Oct-19	D-B25-10.0-10.5	N	10	10.5	0-15	Onsite
B25	31-Oct-19	D-B25-15.0-15.5	N	15	15.5	>15	Onsite
B25	31-Oct-19	D-B25-20.0-20.5	N	20	20.5	>15	Onsite
B25	31-Oct-19	D-B25-25.0-25.5	N	25	25.5	>15	Onsite
B25	31-Oct-19	D-B25-30.0-30.5	N	30	30.5	>15	Onsite
B25	31-Oct-19	D-B25-40.0-40.5	N	40	40.5	>15	Onsite
B25	31-Oct-19	D-FD04-103119	FD	40	40.5	>15	Onsite
B26	28-Oct-19	D-B26-0-102719	N	0	0.25	0-15	Onsite
B26	01-Nov-19	D-B26-2.5-3.0	N	2.5	3	0-15	Onsite
B26	01-Nov-19	D-FD05-110119	FD	2.5	3	0-15	Onsite
B26	01-Nov-19	D-B26-5.0-5.5	N	5	5.5	0-15	Onsite
B26	02-Nov-19	D-B26-7.5-8.0	N	7.5	8	0-15	Onsite
B26	02-Nov-19	D-B26-10.0-10.5	N	10	10.5	0-15	Onsite
B26	02-Nov-19	D-B26-15.0-15.5	N	15	15.5	>15	Onsite
B26	02-Nov-19	D-B26-20.0-20.5	N	20	20.5	>15	Onsite
B26	02-Nov-19	D-B26-25.0-25.5	N	25	25.5	>15	Onsite
B26	02-Nov-19	D-B26-30.0-30.5	N	30	30.5	>15	Onsite
B26	02-Nov-19	D-B26-40.0-40.5	N	40	40.5	>15	Onsite
B27	27-Oct-19	D-B27-0-102719	N	0	0.25	0-15	Background (Offsite)
B27	03-Nov-19	D-B27-2.5-3.0	N	2.5	3	0-15	Background (Offsite)
B27	03-Nov-19	D-FD01-110319	FD	2.5	3	0-15	Background (Offsite)
B27	03-Nov-19	D-B27-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B27	03-Nov-19	D-B27-7.5-8.0	N	7.5	8	0-15	Background (Offsite)
B27	03-Nov-19	D-B27-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B27	03-Nov-19	D-B27-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B27	03-Nov-19	D-B27-20.0-20.5	N	20	20.5	>15	Background (Offsite)
B27	03-Nov-19	D-B27-25.0-25.5	N	25	25.5	>15	Background (Offsite)
B27	03-Nov-19	D-FD02-110319	FD	25	25.5	>15	Background (Offsite)
B27	04-Nov-19	D-B27-30.0-30.5	N	30	30.5	>15	Background (Offsite)
B27	02-Nov-19	D-FD01-110219	FD	30	30.5	>15	Background (Offsite)
B27	04-Nov-19	D-B27-40.0-40.5	N	40	40.5	>15	Background (Offsite)
B28	27-Oct-19	D-B28-0-102719	N	0	0.25	0-15	Background (Offsite)
B28	29-Oct-19	D-B28-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B28	29-Oct-19	D-FD03-102919	FD	5	5.5	0-15	Background (Offsite)
B28	29-Oct-19	D-B28-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B28	29-Oct-19	D-B28-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B28	29-Oct-19	D-B28-19.5-20.0	N	19.5	20	>15	Background (Offsite)
B29	27-Oct-19	D-B29-0-102719	N	0	0.25	0-15	Background (Offsite)
B29	07-Nov-19	D-B29-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B29	07-Nov-19	D-B29-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B29	07-Nov-19	D-B29-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B29	07-Nov-19	D-B29-20.0-20.5	N	20	20.5	>15	Background (Offsite)
B30	07-Nov-19	D-B29-20.0-20.5	N	19.5	20	>15	Background (Offsite)
B30	28-Oct-19	D-B30-0-102719	N	0	0.25	0-15	Background (Offsite)
B30	01-Nov-19	D-B30-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B30	01-Nov-19	D-FD01-110119	FD	5	5.5	0-15	Background (Offsite)
B30	01-Nov-19	D-B30-10.0-10.5	N	10	10.5	0-15	Background (Offsite)

Table K-1

Soil Samples Used in Human Health Risk Assessment

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Sample Date	Sample ID	Sample Type	Top Depth (Feet bgs)	Bottom Depth (Feet bgs)	Depth Group (Feet bgs)	Exposure Area
B30	01-Nov-19	D-B30-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B30	01-Nov-19	D-B30-19.5-20.0	N	19.5	20	>15	Background (Offsite)
B31	27-Oct-19	D-B31-0-102719	N	0	0.25	0-15	Background (Offsite)
B31	28-Oct-19	D-B31-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B31	06-Nov-19	D-B31-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B31	06-Nov-19	D-B31-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B31	06-Nov-19	D-B31-20.0-20.5	N	20	20.5	>15	Background (Offsite)
B32	27-Oct-19	D-B32-0-102719	N	0	0.25	0-15	Background (Offsite)
B32	28-Oct-19	D-B32-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B32	28-Oct-19	B-FD02-102819	FD	5	5.5	0-15	Background (Offsite)
B32	06-Nov-19	D-B32-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B32	06-Nov-19	D-B32-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B32	06-Nov-19	D-B32-20.0-20.5	N	20	20.5	>15	Background (Offsite)
B33	27-Oct-19	D-B33-0-102719	N	0	0.25	0-15	Background (Offsite)
B33	28-Oct-19	D-B33-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B33	06-Nov-19	D-B33-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B33	06-Nov-19	D-B33-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B33	06-Nov-19	D-B33-20.0-20.5	N	20	20.5	>15	Background (Offsite)
B34	27-Oct-19	D-B34-0-102719	N	0	0.25	0-15	Background (Offsite)
B34	27-Oct-19	D-FD01-102819	FD	0	0.25	0-15	Background (Offsite)
B34	28-Oct-19	D-B34-5.0-5.5-102819	N	5	5.5	0-15	Background (Offsite)
B34	06-Nov-19	D-B34-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B34	06-Nov-19	D-B34-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B34	06-Nov-19	D-B34-20.0-20.5	N	20	20.5	>15	Background (Offsite)
B34	28-Oct-19	D-FD01-102819	FD	0	0.25	0-15	Background (Offsite)
B35	27-Oct-19	D-B35-0-102719	N	0	0.25	0-15	Background (Offsite)
B35	28-Oct-19	D-B35-5.0-5.5	N	5	5.5	0-15	Background (Offsite)
B35	05-Nov-19	D-B35-10.0-10.5	N	10	10.5	0-15	Background (Offsite)
B35	05-Nov-19	D-B35-15.0-15.5	N	15	15.5	>15	Background (Offsite)
B35	05-Nov-19	D-B35-20.0-20.5	N	20	20.5	>15	Background (Offsite)

Notes:

bgs = below ground surface

FD = Field Duplicale

N = Normal

Table K-2

Groundwater Samples Used in Human Health Risk Assessment

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Sample Date	Sample ID	Sample Type	Sample Depth (Feet bgs)
D-MW25	07-Nov-19	D-MW25	N	26.48
D-MW26	07-Nov-19	D-MW26	N	28.79
D-MW27	07-Nov-19	D-MW27	N	29.38
D-MW27	07-Nov-19	D-FD01-110719	FD	29.38

Notes:

bgs = below ground surface

FD = Field Duplicale

N = Normal

Table K-3

Summary Statistics for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Surface and Subsurface Soil (0-15 feet bgs) ***All units are milligrams per kilogram (mg/kg)***

Analyte	CAS #	Number of Samples	Number of Detects	Detection Frequency	Minimum Nondetect Concentration	Maximum Nondetect Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Mean Concentration	Residential RSL (TR = 1E-05) (THQ = 1)		Industrial RSL (TR = 1E-05) (THQ = 1)		Maximum Detected Concentration Exceeds Residential RSL	Maximum Detected Concentration Exceeds Industrial RSL	95% UCL
Acenaphthene	83-32-9	73	13	18%	0.00166	0.669	0.00198	0.955	0.195	3600	N	45000	N	No	No	NC
Acenaphthylene [1]	208-96-8	73	57	78%	0.00166	0.0333	0.00183	14.2	0.914	3600	N	45000	N	No	No	NC
Anthracene	120-12-7	73	54	74%	0.00166	0.0334	0.0022	6.63	0.456	18000	N	230000	N	No	No	NC
Arsenic	7440-38-2	73	73	100%	N/A	N/A	7.38	50.3	17.22	6.8	C	30	C	Yes	Yes	18.65
Barium	7440-39-3	73	73	100%	N/A	N/A	53.3	937	184.7	15000	N	220000	N	No	No	NC
Benzene	71-43-2	18	1	6%	0.0419	0.0628	0.509	0.509	0.509	12	C	51	C	No	No	NC
Benzo[a]anthracene [3]	56-55-3	73	66	90%	0.00167	0.00834	0.00177	17.5	0.963	11	C	210	C	Yes	No	5.662
Benzo[a]pyrene [2]	50-32-8	73	70	96%	0.00167	0.00832	0.00222	28.9	1.53	18	N	220	N	Yes	No	10.87
BAP TEQ (ND = 1/2*RL)	50-32-8	79	74	94%	0.002	0.01	0.004	35.56	2.023	1.1	C	21	C	Yes	Yes	12.41
BAP TEQ (ND = 0)	50-32-8	79	74	94%	0	0	0.003	35.53	2.01	1.1	C	21	C	Yes	Yes	7.43
Benzo[b]fluoranthene [3]	205-99-2	73	71	97%	0.00167	0.00167	0.00248	26.4	1.534	11	C	210	C	Yes	No	10.18
Benzo[g,h,i]perylene [1]	191-24-2	73	70	96%	0.00167	0.00832	0.00175	30.3	1.524	1800	N	23000	N	No	No	NC
Benzo[k]fluoranthene [3]	207-08-9	73	59	81%	0.00166	0.00834	0.00175	7.09	0.538	110	C	2100	C	No	No	NC
Cadmium	7440-43-9	73	1	1%	1.67	2	2.2	2.2	2.2	71	N	980	N	No	No	NC
Chromium [1]	7440-47-3	73	73	100%	N/A	N/A	5.51	43.2	13.07	3.0	C	63	C	Yes	No	14.28
Chrysene [3]	218-01-9	73	69	95%	0.00167	0.00832	0.00179	20.7	1.115	1100	C	21000	C	No	No	NC
Dibenz[a,h]anthracene [3]	53-70-3	73	5	7%	0.00166	0.669	0.00541	1.26	0.364	1.1	C	21	C	Yes	No	0.101
Fluoranthene	206-44-0	73	71	97%	0.00167	0.00167	0.00377	71	3.394	2400	N	30000	N	No	No	NC
Fluorene	86-73-7	73	34	47%	0.00166	0.669	0.00212	5.82	0.546	2400	N	30000	N	No	No	NC
Indeno[1,2,3-cd]pyrene [3]	193-39-5	73	69	95%	0.00167	0.00832	0.00187	21.5	1.106	11	C	210	C	Yes	No	6.883
Lead	7439-92-1	73	73	100%	N/A	N/A	8.74	531	52.27	400	N	800	N	Yes	No	60.03
m,p-Xylenes [1]	108-38-3	18	1	6%	0.0839	0.126	0.197	0.197	0.197	550	N	2400	N	No	No	NC
Mercury	7439-97-6	73	38	52%	0.0167	0.0625	0.0174	0.127	0.0382	11	N	46	N	No	No	NC
Naphthalene	91-20-3	73	20	27%	0.0166	6.69	0.021	35.9	4.757	38	C	170	C	No	No	NC
o-Xylene	95-47-6	18	1	6%	0.0419	0.0628	0.133	0.133	0.133	650	N	2800	N	No	No	NC
Phenanthrene [1]	85-01-8	73	71	97%	0.00167	0.00167	0.00226	70.8	3.184	18000	N	230000	N	No	No	NC
Pyrene	129-00-0	73	71	97%	0.00167	0.00167	0.00469	83.6	4.062	1800	N	23000	N	No	No	NC
Toluene	108-88-3	18	1	6%	0.21	0.314	0.38	0.38	0.38	4900	N	47000	N	No	No	NC
Total Xylenes	1330-20-7	18	1	6%	0.0419	0.0628	0.33	0.33	0.33	580	N	2500	N	No	No	NC

Notes:

[1] For chemicals without published Regional Screening Levels, surrogate values were selected as indicated below:

RSLs for acenapthhene was used for acenaphthylene, pyrene for benzo(g,h,i)perylene, anthracene for phenanthrene, m- Xylene for m,p-xylenes, hexavalent chromium for total chromium.

[2] Benzo(a)pyrene was evaluated both as a carcinogen using a BAP TEQ concentration and as a noncarcinogen using benzo(a)pyrene concentration.

[3] Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene were evaluated as a carcinogen using a BAP TEQ concentration for risk calculations

[4] Lead is evaluated by comparing EPC with RSL only.

-- = not applicable because of no RSL available

(ND = 0) = Indicates that for nondetects the value used in the BAP TEQ calculation was zero.

(ND = 1/2*RL) = Indicates that for nondetects the value used in the BAP TEQ calculation was half the reporting limit

bgs = below ground surface

C = RSL based on cancer effects

COPC = chemical of potential concern

N = RSL based on noncancer effects

NA = not available or not applicable

NC = not calculated (maximum detected concentration does not exceed RSL)

ND = nondetect

BAP TEQ = benzo(a)pyrene toxicity equivalent

RL = reporting limit

RSL = EPA Regional Screening Level for Residential and industrial soil (Accessed 12/02/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.

THQ = target hazard quotient

TR = target risk

UCL = upper confidence limit

Table K-4

Summary Statistics for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Surface and Subsurface Soil (0-15 feet bgs) ***All units are milligrams per kilogram (mg/kg)***															
Analyte	**CAS #**	**Number of Samples**	**Number of Detects**	**Detection Frequency**	**Minimum Nondetect Concentration**	**Maximum Nondetect Concentration**	**Minimum Detected Concentration**	**Maximum Detected Concentration**	**Mean Concentration**	**Residential RSL (TR = 1E-05) (THQ = 1)**		**Industrial RSL (TR = 1E-05) (THQ = 1)**		**Maximum Concentration Exceeds Residential RSL**	**Maximum Concentration Exceeds Industrial RSL**	**95% UCL**
Acenaphthylene [1]	208-96-8	39	18	46%	0.00166	0.0167	0.00226	0.0883	0.0187	3600	N	45000	N	No	No	NC
Anthracene	120-12-7	39	19	49%	0.00165	0.0167	0.00206	0.0726	0.0162	18000	N	230000	N	No	No	NC
Arsenic	7440-38-2	39	39	100%	N/A	N/A	7.22	25.8	14.34	6.8	C	30	C	Yes	No	15.78
Barium	7440-39-3	39	39	100%	N/A	N/A	39.5	607	159	15000	N	220000	N	No	No	NC
Benzo[a]anthracene [3]	56-55-3	39	28	72%	0.00165	0.00834	0.00405	0.287	0.0458	11	C	210	C	No	No	NC
Benzo[a]pyrene [2]	50-32-8	39	31	79%	0.00165	0.00167	0.0021	0.392	0.0619	18	N	220	N	No	No	NC
BAP TEQ (ND = 1/2*RL)	50-32-8	43	36	84%	0.002	0.002	0.002	0.535	0.0701	1.1	C	21	C	No	No	NC
BAP TEQ (ND = 0)	50-32-8	43	36	84%	0	0	0.0002	0.535	0.0674	1.1	C	21	C	No	No	NC
Benzo[b]fluoranthene [3]	205-99-2	39	33	85%	0.00166	0.00167	0.00184	0.456	0.0838	11	C	210	C	No	No	NC
Benzo[g,h,i]perylene [1]	191-24-2	39	30	77%	0.00165	0.00167	0.00232	0.265	0.0449	1800	N	23000	N	No	No	NC
Benzo[k]fluoranthene [3]	207-08-9	39	24	62%	0.00165	0.0167	0.00267	0.142	0.0297	110	C	2100	C	No	No	NC
Cadmium	7440-43-9	39	1	3%	1.67	2	2.78	2.78	2.78	71	N	980	N	No	No	NC
Chromium [1]	7440-47-3	39	39	100%	N/A	N/A	6.16	22.6	10.95	3.0	C	63	C	Yes	No	11.87
Chrysene [3]	218-01-9	39	31	79%	0.00165	0.00167	0.00178	0.325	0.053	1100	C	21000	C	No	No	NC
Dibenz[a,h]anthracene [3]	53-70-3	39	3	8%	0.00165	0.0167	0.00245	0.045	0.0167	1.1	C	21	C	No	No	NC
Fluoranthene	206-44-0	39	32	82%	0.00166	0.00167	0.00205	0.603	0.102	2400	N	30000	N	No	No	NC
Fluorene	86-73-7	39	4	10%	0.00165	0.0167	0.00471	0.0405	0.0158	2400	N	30000	N	No	No	NC
Indeno[1,2,3-cd]pyrene [3]	193-39-5	39	28	72%	0.00165	0.0167	0.0018	0.218	0.0379	11	C	210	C	No	No	NC
Lead	7439-92-1	39	39	100%	N/A	N/A	6.48	222	35.36	400	N	800	N	No	No	NC
Mercury	7439-97-6	39	21	54%	0.0167	0.0196	2.28E-04	0.242	0.0515	11	N	46	N	No	No	NC
Naphthalene	91-20-3	39	1	3%	0.0165	0.167	0.0168	0.0168	0.0168	38	C	170	C	No	No	NC
Phenanthrene [1]	85-01-8	39	28	72%	0.00166	0.0167	0.00169	0.641	0.0717	18000	N	230000	N	No	No	NC
Pyrene	129-00-0	39	33	85%	0.00166	0.00167	0.00187	0.75	0.115	1800	N	23000	N	No	No	NC

Notes:

[1] For chemicals without published Regional Screening Levels, surrogate values were selected as indicated below:
RSLs for acenapthhene was used for acenaphthylene, pyrene for benzo(g,h,i)perylene, anthracene for phenanthrene, hexavalent chromium for total chromium.

[2] Benzo(a)pyrene was evaluated both as a carcinogen using a BAP TEQ concentration and as a noncarcinogen using benzo(a)pyrene concentration.

[3] Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene were evaluated as a carcinogen using a BAP TEQ concentration for risk calculations

[4] Lead is evaluated by comparing EPC with RSL only.

-- = not applicable because of no RSL available
(ND = 0) = Indicates that for nondetects the value used in the BAP TEQ calculation was zero.
(ND = 1/2*RL) = Indicates that for nondetects the value used in the BAP TEQ calculation was half the reporting limit
bgs = below ground surface
C = RSL based on cancer effects
COPC = chemical of potential concern
N = RSL based on noncancer effects
NA = not available or not applicable
NC = not calculated (maximum detected concentration does not exceed RSL)
ND = nondetect
BAP TEQ = benzo(a)pyrene toxicity equivalent
RL = reporting limit
RSL = EPA Regional Screening Level for Residential and industrial soil (Accessed 12/02/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.
THQ = target hazard quotient
TR = target risk
UCL = upper confidence limit

Table K-5

Summary Statistics for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Deep Soil (>15 feet bgs) ***All units are milligrams per kilogram (mg/kg)***

Analyte	CAS #	Number of Samples	Number of Detects	Detection Frequency	Minimum Nondetect Concentration	Maximum Nondetect Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Mean Concentration	Residential RSL (TR = 1E-05) (THQ = 1)		Industrial RSL (TR = 1E-05) (THQ = 1)		Maximum Concentration Exceeds Residential RSL	Maximum Concentration Exceeds Industrial RSL	95% UCL
Acenaphthene	83-32-9	32	5	16%	0.00166	0.0333	0.00187	0.00607	0.00312	3600	N	45000	N	No	No	NC
Acenaphthylene [1]	208-96-8	32	20	63%	0.00166	0.00167	0.00175	0.538	0.0841	3600	N	45000	N	No	No	NC
Anthracene	120-12-7	32	19	59%	0.00166	0.00167	0.00256	0.347	0.0487	18000	N	230000	N	No	No	NC
Arsenic	7440-38-2	27	27	100%	N/A	N/A	4.16	24.5	14.83	6.8	C	30	C	Yes	No	16.73
Barium	7440-39-3	27	27	100%	N/A	N/A	35.2	906	172.2	15000	N	220000	N	No	No	NC
Benzo(a)anthracene [3]	56-55-3	32	22	69%	0.00166	0.00167	0.00227	1.52	0.155	11	C	210	C	No	No	NC
Benzo(a)pyrene [2]	50-32-8	32	24	75%	0.00166	0.00167	0.00268	2.73	0.266	18	N	220	N	No	No	NC
BAP TEQ (ND = 1/2*RL)	50-32-8	35	35	100%	N/A	N/A	0.002	3.4	0.239	1.1	C	21	C	Yes	No	0.931
BAP TEQ (ND = 0)	50-32-8	35	35	100%	N/A	N/A	0.003	3.383	0.237	1.1	C	21	C	Yes	No	0.718
Benzo(b)fluoranthene [3]	205-99-2	32	24	75%	0.00166	0.00167	0.00319	3.04	0.289	11	C	210	C	No	No	NC
Benzo[g,h,i]perylene [1]	191-24-2	32	24	75%	0.00166	0.00167	0.00299	2.6	0.266	1800	N	23000	N	No	No	NC
Benzo(k)fluoranthene [3]	207-08-9	32	20	63%	0.00166	0.00167	0.00238	0.698	0.0929	110	C	2100	C	No	No	NC
Chromium [1]	7440-47-3	27	27	100%	N/A	N/A	3.78	129	24.54	3	C	63	C	Yes	Yes	32.34
Chrysene [3]	218-01-9	32	24	75%	0.00166	0.00167	0.00176	1.89	0.179	1100	C	21000	C	No	No	NC
Dibenz(a,h)Anthracene [3]	53-70-3	32	2	6%	0.00166	0.0333	0.025	0.165	0.095	1.1	C	21	C	No	No	NC
Fluoranthene	206-44-0	32	24	75%	0.00166	0.00167	0.00495	4.96	0.508	2400	N	30000	N	No	No	NC
Fluorene	86-73-7	32	14	44%	0.00166	0.0167	0.00211	0.141	0.0276	2400	N	30000	N	No	No	NC
Indeno(1,2,3-c,d)Pyrene [3]	193-39-5	32	24	75%	0.00166	0.00167	0.00233	1.88	0.19	11	C	210	C	No	No	NC
Lead [4]	7439-92-1	27	27	100%	N/A	N/A	4.13	62.8	14.98	400.0	N	800	N	No	No	NC
Mercury	7439-97-6	27	1	4%	0.0167	0.189	0.0235	0.0235	0.0235	11.0	N	46	N	No	No	NC
Naphthalene	91-20-3	32	7	22%	0.0166	0.333	0.0188	0.514	0.151	38	C	170	C	No	No	NC
Phenanthrene [1]	85-01-8	32	24	75%	0.00166	0.00167	0.00245	3.12	0.352	18000	N	230000	N	No	No	NC
Pyrene	129-00-0	32	24	75%	0.00166	0.00167	0.00624	6.63	0.64	1800	N	23000	N	No	No	NC

Notes:

[1] For chemicals without published Regional Screening Levels, surrogate values were selected as indicated below:

RSLs for acenapthhene was used for acenaphthylene, pyrene for benzo(g,h,i)perylene, and anthracene for phenanthrene, hexavalent chromium for total chromium.

[2] Benzo(a)pyrene was evaluated both as a carcinogen using a BAP TEQ concentration and as a noncarcinogen using benzo(a)pyrene concentration.

[3] Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene were evaluated as a carcinogen using a BAP TEQ concentration for risk calculations

[4] Lead is evaluated by comparing EPC with RSL only.

-- = not applicable because of no RSL exceedance (i.e., no COPC identified)

(ND = 0) Indicates that for nondetects the value used in the BAP TEQ calculation was zero.

(ND = 1/2*RL) = Indicates that for nondetects the value used in the BAP TEQ calculation was half the reporting limit

bgs = below ground surface

C = RSL based on cancer effects

COPC = chemical of potential concern

N = RSL based on noncancer effects

NC = not calculated (maximum detected concentration does not exceed RSL)

ND = nondetect

BAP TEQ = benzo(a)pyrene toxicity equivalent

RL = reporting limit

RSL = EPA Regional Screening Level for Residential and industrial soil (Accessed 12/02/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.

THQ = target hazard quotient

TR = target risk

UCL = upper confidence limit

Table K-6

Summary Statistics for Deep Soil (>15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Deep Soil (>15 feet bgs) ***All units are milligrams per kilogram (mg/kg)***

Analyte	CAS #	Number of Samples	Number of Detects	Detection Frequency	Minimum Nondetect Concentration	Maximum Nondetect Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Mean Concentration	Residential RSL (TR = 1E-05) (THQ = 1)		Industrial RSL (TR = 1E-05) (THQ = 1)		Maximum Concentration Exceeds Residential RSL	Maximum Concentration Exceeds Industrial RSL	95% UCL
Acenaphthylene [1]	208-96-8	23	8	35%	0.00166	0.00167	0.00219	0.0127	0.00559	3600	N	45000	N	No	No	NC
Anthracene	120-12-7	23	6	26%	0.00166	0.00167	0.00183	0.00962	0.00474	18000	N	230000	N	No	No	NC
Arsenic	7440-38-2	22	22	100%	N/A	N/A	8.59	32.6	15.79	6.8	C	30	C	Yes	Yes	17.92
Barium	7440-39-3	22	22	100%	N/A	N/A	18.9	767	184.3	15000	N	220000	N	No	No	NC
Benzo(a)anthracene [3]	56-55-3	23	10	43%	0.00166	0.00167	0.00178	0.044	0.0163	11	C	210	C	No	No	NC
Benzo(a)pyrene [2]	50-32-8	23	11	48%	0.00166	0.00167	0.00198	0.0882	0.028	18	N	220	N	No	No	NC
BAP TEQ (ND = 1/2*RL)	50-32-8	25	14	56%	0.002	0.002	0.002	0.111	0.0169	1.1	C	21	C	No	No	NC
BAP TEQ (ND = 0)	50-32-8	25	14	56%	0	0	0	0.11	0.0154	1.1	C	21	C	No	No	NC
Benzo(b)fluoranthene [3]	205-99-2	23	14	61%	0.00166	0.00167	0.00198	0.117	0.0276	11	C	210	C	No	No	NC
Benzo[g,h,i]perylene [1]	191-24-2	23	11	48%	0.00166	0.00167	0.00211	0.0918	0.0268	1800	N	23000	N	No	No	NC
Benzo(k)fluoranthene [3]	207-08-9	23	10	43%	0.00166	0.00167	0.00176	0.0313	0.011	110	C	2100	C	No	No	NC
Chromium [1]	7440-47-3	22	22	100%	N/A	N/A	5.12	63	14.64	3	C	63	C	Yes	No	25.4
Chrysene [3]	218-01-9	23	10	43%	0.00166	0.00167	0.00352	0.0629	0.0217	1100	C	21000	C	No	No	NC
Fluoranthene	206-44-0	23	14	61%	0.00166	0.00167	0.00217	0.124	0.0327	2400	N	30000	N	No	No	NC
Indeno(1,2,3-c,d)Pyrene [3]	193-39-5	23	11	48%	0.00166	0.00167	0.00175	0.062	0.0197	11	C	210	C	No	No	NC
Lead [4]	7439-92-1	22	22	100%	N/A	N/A	3.86	23	12.63	400.0	N	800	N	No	No	NC
Phenanthrene [1]	85-01-8	23	9	39%	0.00166	0.00167	0.00383	0.049	0.0209	18000	N	230000	N	No	No	NC
Pyrene	129-00-0	23	14	61%	0.00166	0.00167	0.00226	0.155	0.042	1800	N	23000	N	No	No	NC

Notes:

[1] For chemicals without published Regional Screening Levels, surrogate values were selected as indicated below:

RSLs for acenapthhene was used for acenaphthylene, pyrene for benzo(g,h,i)perylene, and anthracene for phenanthrene, hexavalent chromium for total chromium.

[2] Benzo(a)pyrene was evaluated both as a carcinogen using a BAP TEQ concentration and as a noncarcinogen using benzo(a)pyrene concentration.

[3] Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene were evaluated as a carcinogen using a BAP TEQ concentration for risk calculations

[4] Lead is evaluated by comparing EPC with RSL only.

-- = not applicable because of no RSL exceedance (i.e., no COPC identified)

(ND = 0) Indicates that for nondetects the value used in the BAP TEQ calculation was zero.

(ND = 1/2*RL) = Indicates that for nondetects the value used in the BAP TEQ calculation was half the reporting limit

bgs = below ground surface

C = RSL based on cancer effects

COPC = chemical of potential concern

N = RSL based on noncancer effects

NC = not calculated (maximum detected concentration does not exceed RSL)

ND = nondetect

BAP TEQ = benzo(a)pyrene toxicity equivalent

RL = reporting limit

RSL = EPA Regional Screening Level for Residential and industrial soil (Accessed 12/02/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.

THQ = target hazard quotient

TR = target risk

UCL = upper confidence limit

Table K-7

Summary Statistics for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Groundwater -- All units are milligram per liter

Analyte	CAS #	Number of Samples	Number of Detects	Detection Frequency	Minimum Nondetect Concentration	Maximum Nondetect Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Mean Concentration	Tap Water RSL (TR = 1E-05) (THQ = 1)		Maximum Concentration Exceeds Residential RSL	95% UCL	EPC	EPC Basis	Residential ELCR	Residential HQ
1,1-Dichloroethene	75-35-4	3	2	67%	0.001	0.001	0.00402	0.00437	0.0042	0.28	N	No	NC	0.00437	Maximum	--	0.00002
Arsenic	7440-38-2	3	3	100%	N/A	N/A	0.00466	0.0068	0.00573	0.00052	C	Yes	0.00754	0.0068	Maximum	1.3E-07	0.001
Barium	7440-39-3	3	3	100%	N/A	N/A	0.0431	0.0557	0.0474	3.8	N	No	NC	0.0557	Maximum	--	0.00001
Copper	7440-50-8	3	1	33%	0.004	0.004	0.00488	0.00488	0.00488	0.8	N	No	NC	0.00488	Maximum	--	0.00001
Manganese	7439-96-5	3	3	100%	N/A	N/A	0.0536	0.367	0.159	0.43	N	No	NC	0.367	Maximum	--	0.0009
Molybdenum	7439-98-7	3	2	67%	0.002	0.002	0.00275	0.00311	0.00293	0.1	N	No	NC	0.00311	Maximum	--	0.00003
Nickel	7440-02-0	3	1	33%	0.002	0.002	0.00367	0.00367	0.00367	0.39	N	No	NC	0.00367	Maximum	--	0.00001
Selenium	7782-49-2	3	3	100%	N/A	N/A	0.00498	0.0115	0.00838	0.1	N	No	NC	0.0115	Maximum	--	0.0001
Toluene	108-88-3	3	3	100%	N/A	N/A	0.00224	0.00792	0.00536	1.1	N	No	NC	0.00792	Maximum	--	0.00001
Trichloroethylene	79-01-6	3	3	100%	N/A	N/A	0.0129	0.078	0.054	0.0028	N	Yes	0.114	0.078	Maximum	1.6E-07	0.03

Total Risk/HI	3E-07	0.03

Notes:

-- = not applicable because of no RSL available

C = RSL based on cancer effects

COPC = chemical of potential concern

ELCR = excess lifetime cancer risk

HI = hazard index

N = RSL based on noncancer effects

NA = not available or not applicable

NC = not calculated

ND = nondetect

RL = reporting limit

RSL = EPA Regional Screening Level for Tap Water (Accessed 11/27/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.

THQ = target hazard quotient

TR = target risk

UCL = upper confidence limit

Table K-8

Risk Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Surface and Subsurface Soil (0-15 feet bgs) ***All units are milligrams per kilogram (mg/kg)***

Analyte	CAS #	Number of Samples	Number of Detects	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	95% UCL	EPC	EPC Basis	Residential ELCR	Residential HQ	Industrial ELCR	Industrial HQ
Acenaphthene	83-32-9	73	13	18%	0.00198	0.955	NC	0.955	Maximum	--	0.0003	--	0.00002
Acenaphthylene [1]	208-96-8	73	57	78%	0.00183	14.2	NC	14.2	Maximum	--	0.004	--	0.0003
Anthracene	120-12-7	73	54	74%	0.0022	6.63	NC	6.63	Maximum	--	0.0004	--	0.00003
Arsenic	7440-38-2	73	73	100%	7.38	50.3	18.65	18.65	95% Approximate Gamma UCL	2.7E-05	1	6.2E-06	0.04
Barium	7440-39-3	73	73	100%	53.3	937	NC	937	Maximum	--	0.06	--	0.004
Benzene	71-43-2	18	1	6%	0.509	0.509	NC	0.509	Maximum	4.2E-07	0.006	1.0E-07	0.001
Benzo[a]anthracene [3]	56-55-3	73	66	90%	0.00177	17.5	5.662	5.662	KM H-UCL	--	--	--	--
Benzo[a]pyrene [2]	50-32-8	73	70	96%	0.00222	28.9	10.87	10.87	KM H-UCL	--	0.6	--	0.05
BAP TEQ (ND = 1/2*RL)	50-32-8	79	74	94%	0.004	35.56	12.41	12.41	KM H-UCL	1.1E-04	--	5.9E-06	--
BAP TEQ (ND = 0)	50-32-8	79	74	94%	0.003	35.53	7.43	7.43	99% KM (Chebyshev) UCL	6.8E-05	--	3.5E-06	--
Benzo[b]fluoranthene [3]	205-99-2	73	71	97%	0.00248	26.4	10.18	10.18	KM H-UCL	--	--	--	--
Benzo[g,h,i]perylene [1]	191-24-2	73	70	96%	0.00175	30.3	NC	30.3	Maximum	--	0.02	--	0.001
Benzo[k]fluoranthene [3]	207-08-9	73	59	81%	0.00175	7.09	NC	7.09	Maximum	--	--	--	--
Cadmium	7440-43-9	73	1	1%	2.2	2.2	NC	2.2	Maximum	1.0E-09	0.03	2.4E-10	0.002
Chromium [1]	7440-47-3	73	73	100%	5.51	43.2	14.28	14.28	95% Student's-t UCL	4.8E-05	0.06	2.3E-06	0.004
Chrysene [3]	218-01-9	73	69	95%	0.00179	20.7	NC	20.7	Maximum	--	--	--	--
Dibenz[a,h]anthracene [3]	53-70-3	73	5	7%	0.00541	1.26	0.101	0.101	95% KM Approximate Gamma UCL	--	--	--	--
Fluoranthene	206-44-0	73	71	97%	0.00377	71	NC	71	Maximum	--	0.03	--	0.002
Fluorene	86-73-7	73	34	47%	0.00212	5.82	NC	5.82	Maximum	--	0.002	--	0.0002
Indeno[1,2,3-cd]pyrene [3]	193-39-5	73	69	95%	0.00187	21.5	6.883	6.883	KM H-UCL	--	--	--	--
Lead	7439-92-1	73	73	100%	8.74	531	60.03	60.03	95% H-UCL	--	--	--	--
m,p-Xylenes [1]	108-38-3	18	1	6%	0.197	0.197	NC	0.197	Maximum	--	0.0004	--	0.00008
Mercury	7439-97-6	73	38	52%	0.0174	0.127	NC	0.127	Maximum	--	0.01	--	0.003
Naphthalene	91-20-3	73	20	27%	0.021	35.9	NC	35.9	Maximum	9.4E-06	0.3	2.1E-06	0.06
o-Xylene	95-47-6	18	1	6%	0.133	0.133	NC	0.133	Maximum	--	0.0002	--	0.00005
Phenanthrene [1]	85-01-8	73	71	97%	0.00226	70.8	NC	70.8	Maximum	--	0.004	--	0.0003
Pyrene	129-00-0	73	71	97%	0.00469	83.6	NC	83.6	Maximum	--	0.05	--	0.004
Toluene	108-88-3	18	1	6%	0.38	0.38	NC	0.38	Maximum	--	0.0001	--	0.00001
Total Xylenes	1330-20-7	18	1	6%	0.33	0.33	NC	0.33	Maximum	--	0.0006	--	0.000

Total Risk/HI (BAP TEQ, ND = 1/2*RL):	2E-04	2	2E-05	0.2
Total Risk/HI (BAP TEQ, ND = 0):	2E-04	2	1E-05	0.2

Risk estimates for site-related COPCs (excludes Chromium):

Total Risk/HI (BAP TEQ, ND = 1/2*RL):	2E-04	2	1E-05	0.2
Total Risk/HI (BAP TEQ, ND = 0):	1E-04	2	1E-05	0.2

Notes:

[1] For chemicals without published Regional Screening Levels, surrogate values were selected as indicated below:

RSLs for acenapthhene was used for acenaphthylene, pyrene for benzo(g,h,i)perylene, anthracene for phenanthrene, m- Xylene for m,p-xylenes, hexavalent chromium for total chromium.

[2] Benzo(a)pyrene was evaluated both as a carcinogen using a BAP TEQ concentration and as a noncarcinogen using benzo(a)pyrene concentration.

[3] Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene were evaluated as a carcinogen using a BAP TEQ concentration for risk calculations

[4] Lead is evaluated by comparing EPC with RSL only.

-- = not applicable because of no RSL available
(ND = 0) = Indicates that for nondetects the value used in the BAP TEQ calculation was zero.
(ND = 1/2*RL) = Indicates that for nondetects the value used in the BAP TEQ calculation was half the reporting limit
bgs = below ground surface
C = RSL based on cancer effects
COPC = chemical of potential concern
ELCR = excess lifetime cancer risk
EPC = exposure point concentration
HI = hazard index
N = RSL based on noncancer effects
NA = not available or not applicable
NC = not calculated
ND = nondetect
BAP TEQ = benzo(a)pyrene toxicity equivalent
RL = reporting limit
RSL = EPA Regional Screening Level for Residential and industrial soil (Accessed 12/02/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.
THQ = target hazard quotient
TR = target risk
UCL = upper confidence limit

Table K-9

Risk Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Surface and Subsurface Soil (0-15 feet bgs) ***All units are milligrams per kilogram (mg/kg)***

Analyte	CAS #	Number of Samples	Number of Detects	Detection Frequency	Minimum Nondetect Concentration	Maximum Nondetect Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Mean Concentration	Residential RSL (TR = 1E-05) (THQ = 1)		Industrial RSL (TR = 1E-05) (THQ = 1)		Maximum Concentration Exceeds Residential RSL	Maximum Concentration Exceeds Industrial RSL	95% UCL	EPC	EPC Basis	Residential ELCR	Residential HQ	Industrial ELCR	Industrial HQ
Acenaphthylene [1]	208-96-8	39	18	46%	0.00166	0.0167	0.00226	0.0883	0.0187	3600	N	45000	N	No	No	NC	0.0883	Maximum	--	0.00002	--	0.000002
Anthracene	120-12-7	39	19	49%	0.00165	0.0167	0.00206	0.0726	0.0162	18000	N	230000	N	No	No	NC	0.0726	Maximum	--	0.000004	--	0.0000003
Arsenic	7440-38-2	39	39	100%	N/A	N/A	7.22	25.8	14.34	6.8	C	30	C	Yes	No	15.78	15.78	95% Student's-t UCL	2.3E-05	0.5	5.3E-06	0.03
Barium	7440-39-3	39	39	100%	N/A	N/A	39.5	607	159	15000	N	220000	N	No	No	NC	607	Maximum	--	0.04	--	0.003
Benzo[a]anthracene [3]	56-55-3	39	28	72%	0.00165	0.00834	0.00405	0.287	0.0458	11	C	210	C	No	No	NC	0.287	Maximum	--	--	--	--
Benzo[a]pyrene [2]	50-32-8	39	31	79%	0.00165	0.00167	0.0021	0.392	0.0619	18	N	220	N	No	No	NC	0.392	Maximum	--	0.02	--	0.002
BAP TEQ (ND = 1/2*RL)	50-32-8	43	36	84%	0.002	0.002	0.002	0.535	0.0701	1.1	C	21	C	No	No	NC	0.535	Maximum	4.9E-06	0.03	2.5E-07	0.002
BAP TEQ (ND = 0)	50-32-8	43	36	84%	0	0	0.0002	0.535	0.0674	1.1	C	21	C	No	No	NC	0.535	Maximum	4.9E-06	0.03	2.5E-07	0.002
Benzo[b]fluoranthene [3]	205-99-2	39	33	85%	0.00166	0.00167	0.00184	0.456	0.0838	11	C	210	C	No	No	NC	0.456	Maximum	--	--	--	--
Benzo[g,h,i]perylene [1]	191-24-2	39	30	77%	0.00165	0.00167	0.00232	0.265	0.0449	1800	N	23000	N	No	No	NC	0.265	Maximum	--	0.0001	--	0.00001
Benzo[k]fluoranthene [3]	207-08-9	39	24	62%	0.00165	0.0167	0.00267	0.142	0.0297	110	C	2100	C	No	No	NC	0.142	Maximum	--	--	--	--
Cadmium	7440-43-9	39	1	3%	1.67	2	2.78	2.78	2.78	71	N	980	N	No	No	NC	2.78	Maximum	1.3E-09	0.04	3.0E-10	0.003
Chromium [1]	7440-47-3	39	39	100%	N/A	N/A	6.16	22.6	10.95	3.0	C	63	C	Yes	No	11.87	11.87	95% Adjusted Gamma UCL	4.0E-05	0.05	1.9E-06	0.003
Chrysene [3]	218-01-9	39	31	79%	0.00165	0.00167	0.00178	0.325	0.053	1100	C	21000	C	No	No	NC	0.325	Maximum	--	--	--	--
Dibenz[a,h]anthracene [3]	53-70-3	39	3	8%	0.00165	0.0167	0.00245	0.045	0.0167	1.1	C	21	C	No	No	NC	0.045	Maximum	--	--	--	--
Fluoranthene	206-44-0	39	32	82%	0.00166	0.00167	0.00205	0.603	0.102	2400	N	30000	N	No	No	NC	0.603	Maximum	--	0.0003	--	0.00002
Fluorene	86-73-7	39	4	10%	0.00165	0.0167	0.00471	0.0405	0.0158	2400	N	30000	N	No	No	NC	0.0405	Maximum	--	0.00002	--	0.000001
Indeno[1,2,3-cd]pyrene [3]	193-39-5	39	28	72%	0.00165	0.0167	0.0018	0.218	0.0379	11	C	210	C	No	No	NC	0.218	Maximum	--	--	--	--
Lead	7439-92-1	39	39	100%	N/A	N/A	6.48	222	35.36	400	N	800	N	No	No	NC	222	Maximum	--	--	--	--
Mercury	7439-97-6	39	21	54%	0.0167	0.0196	2.28E-04	0.242	0.0515	11	N	46	N	No	No	NC	0.242	Maximum	--	0.02	--	0.005
Naphthalene	91-20-3	39	1	3%	0.0165	0.167	0.0168	0.0168	0.0168	38	C	170	C	No	No	NC	0.0168	Maximum	4.4E-09	0.0001	9.9E-10	0.00003
Phenanthrene [1]	85-01-8	39	28	72%	0.00166	0.0167	0.00169	0.641	0.0717	18000	N	230000	N	No	No	NC	0.641	Maximum	--	0.00004	--	0.000003
Pyrene	129-00-0	39	33	85%	0.00166	0.00167	0.00187	0.75	0.115	1800	N	23000	N	No	No	NC	0.75	Maximum	--	0.0004	--	0.00003

Total Risk/HI (BAP TEQ, ND = 1/2*RL):	7E-05	1	7E-06	0.05
Total Risk/HI (BAP TEQ, ND = 0):	7E-05	1	7E-06	0.05

Notes:

[1] For chemicals without published Regional Screening Levels, surrogate values were selected as indicated below:

RSLs for acenapthhene was used for acenaphthylene, pyrene for benzo(g,h,i)perylene, anthracene for phenanthrene, hexavalent chromium for total chromium.

[2] Benzo(a)pyrene was evaluated both as a carcinogen using a BAP TEQ concentration and as a noncarcinogen using benzo(a)pyrene concentration.

[3] Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene were evaluated as a carcinogen using a BAP TEQ concentration for risk calculations

[4] Lead is evaluated by comparing EPC with RSL only.

-- = not applicable because of no RSL available

(ND = 0) = Indicates that for nondetects the value used in the BAP TEQ calculation was zero.

(ND = 1/2*RL) = Indicates that for nondetects the value used in the BAP TEQ calculation was half the reporting limit

bgs = below ground surface

C = RSL based on cancer effects

COPC = chemical of potential concern

ELCR = excess lifetime cancer risk

EPC = exposure point concentration

HI = hazard index

N = RSL based on noncancer effects

NA = not available or not applicable

NC = not calculated

ND = nondetect

BAP TEQ = benzo(a)pyrene toxicity equivalent

RL = reporting limit

RSL = EPA Regional Screening Level for Residential and industrial soil (Accessed 12/02/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.

THQ = target hazard quotient

TR = target risk

UCL = upper confidence limit

Table K-10

Risk Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Deep Soil (>15 feet bgs) ***All units are milligrams per kilogram (mg/kg)***

Analyte	CAS #	Number of Samples	Number of Detects	Detection Frequency	Minimum Nondetect Concentration	Maximum Nondetect Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Mean Concentration	Residential RSL (TR = 1E-05) (THQ = 1)		Industrial RSL (TR = 1E-05) (THQ = 1)		Maximum Concentration Exceeds Residential RSL	Maximum Concentration Exceeds Industrial RSL	95% UCL	EPC	EPC Basis	Residential ELCR	Residential HQ	Industrial ELCR	Industrial HQ
Acenaphthene	83-32-9	32	5	16%	0.00166	0.0333	0.00187	0.00607	0.00312	3600	N	45000	N	No	No	NC	0.006	Maximum	--	0.000002	--	0.0000001
Acenaphthylene [1]	208-96-8	32	20	63%	0.00166	0.00167	0.00175	0.538	0.0841	3600	N	45000	N	No	No	NC	0.538	Maximum	--	0.0001	--	0.00001
Anthracene	120-12-7	32	19	59%	0.00166	0.00167	0.00256	0.347	0.0487	18000	N	230000	N	No	No	NC	0.347	Maximum	--	0.00002	--	0.000002
Arsenic	7440-38-2	27	27	100%	N/A	N/A	4.16	24.5	14.83	6.8	C	30	C	Yes	No	16.73	16.73	95% students-t UCL	2.5E-05	0.5	5.6E-06	0.03
Barium	7440-39-3	27	27	100%	N/A	N/A	35.2	906	172.2	15000	N	220000	N	No	No	NC	906	Maximum	--	0.1	--	0.004
Benzo(a)anthracene [3]	56-55-3	32	22	69%	0.00166	0.00167	0.00227	1.52	0.155	11	C	210	C	No	No	NC	1.5	Maximum	--	--	--	--
Benzo(a)pyrene [2]	50-32-8	32	24	75%	0.00166	0.00167	0.00268	2.73	0.266	18	N	220	N	No	No	NC	2.73	Maximum	--	0.2	--	0.01
BAP TEQ (ND = 1/2*RL)	50-32-8	35	35	100%	N/A	N/A	0.002	3.4	0.239	1.1	C	21	C	Yes	No	0.931	0.93	97.5% Chebyshev (Mean, Sd) UCL	8.5E-06	0.05	4.4E-07	0.004
BAP TEQ (ND = 0)	50-32-8	35	35	100%	N/A	N/A	0.003	3.383	0.237	1.1	C	21	C	Yes	No	0.718	0.72	95% Chebyshev (Mean, Sd) UCL	6.5E-06	0.04	3.4E-07	0.003
Benzo(b)fluoranthene [3]	205-99-2	32	24	75%	0.00166	0.00167	0.00319	3.04	0.289	11	C	210	C	No	No	NC	3.04	Maximum	--	--	--	--
Benzo[g,h,i]perylene [1]	191-24-2	32	24	75%	0.00166	0.00167	0.00299	2.6	0.266	1800	N	23000	N	No	No	NC	2.60	Maximum	--	0.001	--	0.000
Benzo(k)fluoranthene [3]	207-08-9	32	20	63%	0.00166	0.00167	0.00238	0.698	0.0929	110	C	2100	C	No	No	NC	0.70	Maximum	--	--	--	--
Chromium [1]	7440-47-3	27	27	100%	N/A	N/A	3.78	129	24.54	3	C	63	C	Yes	Yes	32.34	32.34	95% Adjusted Gamma UCL	1.1E-04	0.14	5.1E-06	0.009
Chrysene [3]	218-01-9	32	24	75%	0.00166	0.00167	0.00176	1.89	0.179	1100	C	21000	C	No	No	NC	1.89	Maximum	--	--	--	--
Dibenz(a,h)Anthracene [3]	53-70-3	32	2	6%	0.00166	0.0333	0.025	0.165	0.095	1.1	C	21	C	No	No	NC	0.17	Maximum	--	--	--	--
Fluoranthene	206-44-0	32	24	75%	0.00166	0.00167	0.00495	4.96	0.508	2400	N	30000	N	No	No	NC	4.96	Maximum	--	0.002	--	0.000
Fluorene	86-73-7	32	14	44%	0.00166	0.0167	0.00211	0.141	0.0276	2400	N	30000	N	No	No	NC	0.14	Maximum	--	0.00006	--	0.000
Indeno(1,2,3-c,d)Pyrene [3]	193-39-5	32	24	75%	0.00166	0.00167	0.00233	1.88	0.19	11	C	210	C	No	No	NC	1.88	Maximum	--	--	--	--
Lead [4]	7439-92-1	27	27	100%	N/A	N/A	4.13	62.8	14.98	400.0	N	800	N	No	No	NC	62.80	Maximum	--	--	--	--
Mercury	7439-97-6	27	1	4%	0.0167	0.189	0.0235	0.0235	0.0235	11.0	N	46	N	No	No	NC	0.02	Maximum	--	0.002	--	0.001
Naphthalene	91-20-3	32	7	22%	0.0166	0.333	0.0188	0.514	0.151	38	C	170	C	No	No	NC	0.51	Maximum	1.4E-07	0.004	3.0E-08	0.001
Phenanthrene [1]	85-01-8	32	24	75%	0.00166	0.00167	0.00245	3.12	0.352	18000	N	230000	N	No	No	NC	3.12	Maximum	--	0.0002	--	0.00001
Pyrene	129-00-0	32	24	75%	0.00166	0.00167	0.00624	6.63	0.64	1800	N	23000	N	No	No	NC	6.63	Maximum	--	0.004	--	0.0003

Total Risk/HI (BAP TEQ, ND = 1/2*RL):	1E-04	0.9	1E-05	0.07
Total Risk/HI (BAP TEQ, ND = 0):	1E-04	0.9	1E-05	0.07

Risk estimates for site-related COPCs (excludes Arsenic and Chromium):

Total Risk/HI (BAP TEQ, ND = 1/2*RL):	9E-06	0.3	5E-07	0.02
Total Risk/HI (BAP TEQ, ND = 0):	7E-06	0.3	4E-07	0.02

Notes:

[1] For chemicals without published Regional Screening Levels, surrogate values were selected as indicated below:
RSLs for acenapthhene was used for acenaphthylene, pyrene for benzo(g,h,i)perylene, and anthracene for phenanthrene, hexavalent chromium for total chromium.

[2] Benzo(a)pyrene was evaluated both as a carcinogen using a BAP TEQ concentration and as a noncarcinogen using benzo(a)pyrene concentration.

[3] Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene were evaluated as a carcinogen using a BAP TEQ concentration for risk calculations

[4] Lead is evaluated by comparing EPC with RSL only.

-- = not applicable because of no RSL exceedance (i.e., no COPC identified)
(ND = 0) Indicates that for nondetects the value used in the BAP TEQ calculation was zero.
(ND = 1/2*RL) = Indicates that for nondetects the value used in the BAP TEQ calculation was half the reporting limit
bgs = below ground surface
C = RSL based on cancer effects
COPC = chemical of potential concern
ELCR = excess lifetime cancer risk
HI = hazard index
N = RSL based on noncancer effects
NC = not calculated
ND = nondetect
BAP TEQ = benzo(a)pyrene toxicity equivalent
RL = reporting limit
RSL = EPA Regional Screening Level for Residential and industrial soil (Accessed 12/02/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.
THQ = target hazard quotient
TR = target risk
UCL = upper confidence limit

Table K-11

Risk Calculations for Deep Soil (>15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Deep Soil (>15 feet bgs) ***All units are milligrams per kilogram (mg/kg)***																			
Analyte	**CAS #**	**Number of Samples**	**Number of Detects**	**Detection Frequency**	**Minimum Nondetect Concentration**	**Maximum Nondetect Concentration**	**Minimum Detected Concentration**	**Maximum Detected Concentration**	**Mean Concentration**	**Residential RSL (TR = 1E-05) (THQ = 1)**		**Industrial RSL (TR = 1E-05) (THQ = 1)**		**Maximum Concentration Exceeds Residential RSL**	**Maximum Concentration Exceeds Industrial RSL**	**95% UCL**	**EPC**	**EPC Basis**	**Residential ELCR**	**Residential HQ**	**Industrial ELCR**	**Industrial HQ**
Acenaphthylene [1]	208-96-8	23	8	35%	0.00166	0.00167	0.00219	0.0127	0.00559	3600	N	45000	N	No	No	NC	0.013	Maximum	--	0.000004	--	0.0000003
Anthracene	120-12-7	23	6	26%	0.00166	0.00167	0.00183	0.00962	0.00474	18000	N	230000	N	No	No	NC	0.010	Maximum	--	0.000001	--	0.0000000
Arsenic	7440-38-2	22	22	100%	N/A	N/A	8.59	32.6	15.79	6.8	C	30	C	Yes	Yes	17.92	17.92	95% Student's-t UCL	2.6E-05	0.5	6.0E-06	0.04
Barium	7440-39-3	22	22	100%	N/A	N/A	18.9	767	184.3	15000	N	220000	N	No	No	NC	767	Maximum	--	0.05	--	0.003
Benzo(a)anthracene [3]	56-55-3	23	10	43%	0.00166	0.00167	0.00178	0.044	0.0163	11	C	210	C	No	No	NC	0.0	Maximum	--	--	--	--
Benzo(a)pyrene [2]	50-32-8	23	11	48%	0.00166	0.00167	0.00198	0.0882	0.028	18	N	220	N	No	No	NC	0.09	Maximum	--	0.005	--	0.0004
BAP TEQ (ND = 1/2*RL)	50-32-8	25	14	56%	0.002	0.002	0.002	0.111	0.0169	1.1	C	21	C	No	No	NC	0.11	Maximum	1.0E-06	0.006	5.3E-08	0.0005
BAP TEQ (ND = 0)	50-32-8	25	14	56%	0	0	0	0.11	0.0154	1.1	C	21	C	No	No	NC	0.11	Maximum	1.0E-06	0.006	5.2E-08	0.0005
Benzo(b)fluoranthene [3]	205-99-2	23	14	61%	0.00166	0.00167	0.00198	0.117	0.0276	11	C	210	C	No	No	NC	0.12	Maximum	--	--	--	--
Benzo[g,h,i]perylene [1]	191-24-2	23	11	48%	0.00166	0.00167	0.00211	0.0918	0.0268	1800	N	23000	N	No	No	NC	0.09	Maximum	--	0.00005	--	0.000004
Benzo(k)fluoranthene [3]	207-08-9	23	10	43%	0.00166	0.00167	0.00176	0.0313	0.011	110	C	2100	C	No	No	NC	0.03	Maximum	--	--	--	--
Chromium [1]	7440-47-3	22	22	100%	N/A	N/A	5.12	63	14.64	3	C	63	C	Yes	No	25.4	25.40	95% Chebyshev (Mean, Sd) UCL	8.5E-05	0.1	4.0E-06	0.007
Chrysene [3]	218-01-9	23	10	43%	0.00166	0.00167	0.00352	0.0629	0.0217	1100	C	21000	C	No	No	NC	0.06	Maximum	--	--	--	--
Fluoranthene	206-44-0	23	14	61%	0.00166	0.00167	0.00217	0.124	0.0327	2400	N	30000	N	No	No	NC	0.12	Maximum	--	0.00005	--	0.000004
Indeno(1,2,3-c,d)Pyrene [3]	193-39-5	23	11	48%	0.00166	0.00167	0.00175	0.062	0.0197	11	C	210	C	No	No	NC	0.06	Maximum	--	--	--	--
Lead [4]	7439-92-1	22	22	100%	N/A	N/A	3.86	23	12.63	400.0	N	800	N	No	No	NC	23.00	Maximum	--	--	--	--
Phenanthrene [1]	85-01-8	23	9	39%	0.00166	0.00167	0.00383	0.049	0.0209	18000	N	230000	N	No	No	NC	0.05	Maximum	--	0.000003	--	0.0000002
Pyrene	129-00-0	23	14	61%	0.00166	0.00167	0.00226	0.155	0.042	1800	N	23000	N	No	No	NC	0.16	Maximum	--	0.00009	--	0.000007

Total Risk/HI (BAP TEQ, ND = 1/2*RL):	1E-04	0.7	1E-05	0.05
Total Risk/HI (BAP TEQ, ND = 0):	1E-04	0.7	1E-05	0.05

Notes:

[1] For chemicals without published Regional Screening Levels, surrogate values were selected as indicated below:

RSLs for acenapthhene was used for acenaphthylene, pyrene for benzo(g,h,i)perylene, and anthracene for phenanthrene, hexavalent chromium for total chromium.

[2] Benzo(a)pyrene was evaluated both as a carcinogen using a BAP TEQ concentration and as a noncarcinogen using benzo(a)pyrene concentration.

[3] Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene were evaluated as a carcinogen using a BAP TEQ concentration for risk calculations

[4] Lead is evaluated by comparing EPC with RSL only.

-- = not applicable because of no RSL exceedance (i.e., no COPC identified)

(ND = 0) Indicates that for nondetects the value used in the BAP TEQ calculation was zero.

(ND = 1/2*RL) = Indicates that for nondetects the value used in the BAP TEQ calculation was half the reporting limit

bgs = below ground surface

C = RSL based on cancer effects

COPC = chemical of potential concern

ELCR = excess lifetime cancer risk

HI = hazard index

N = RSL based on noncancer effects

NC = not calculated

ND = nondetect

BAP TEQ = benzo(a)pyrene toxicity equivalent

RL = reporting limit

RSL = EPA Regional Screening Level for Residential and industrial soil (Accessed 12/02/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.

THQ = target hazard quotient

TR = target risk

UCL = upper confidence limit

Table K-12

Risk Calculations for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Groundwater -- All units are milligram per liter

Analyte	CAS #	Number of Samples	Number of Detects	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	95% UCL	EPC	EPC Basis	Tap Water RSL Cancer Effects (TR = 1E-05)	Residential ELCR	Tap Water RSL Noncancer Effects (THQ = 1)	Residential HQ
1,1-Dichloroethene	75-35-4	3	2	67%	0.00402	0.00437	NC	0.00437	Maximum	--	--	280	0.00002
Arsenic	7440-38-2	3	3	100%	0.00466	0.0068	0.00754	0.0068	Maximum	5.2E-01	1.3E-07	6	0.001
Barium	7440-39-3	3	3	100%	0.0431	0.0557	NC	0.0557	Maximum	--	--	3800	0.00001
Copper	7440-50-8	3	1	33%	0.00488	0.00488	NC	0.00488	Maximum	--	--	800	0.00001
Manganese	7439-96-5	3	3	100%	0.0536	0.367	NC	0.367	Maximum	--	--	430	0.0009
Molybdenum	7439-98-7	3	2	67%	0.00275	0.00311	NC	0.00311	Maximum	--	--	100	0.00003
Nickel	7440-02-0	3	1	33%	0.00367	0.00367	NC	0.00367	Maximum	--	--	390	0.00001
Selenium	7782-49-2	3	3	100%	0.00498	0.0115	NC	0.0115	Maximum	--	--	100	0.0001
Toluene	108-88-3	3	3	100%	0.00224	0.00792	NC	0.00792	Maximum	--	--	1100	0.00001
Trichloroethylene	79-01-6	3	3	100%	0.0129	0.078	0.114	0.078	Maximum	4.9E+00	1.6E-07	3	0.03

Total ELCR: 3E-07 HI: 0.03

Notes:

-- = not applicable because of no RSL available

ELCR = excess lifetime cancer risk

HI = hazard index

HQ = hazard quotient

Maximum = maximum detected concentration

NC = not calculated

RSL = EPA Regional Screening Level for Tap Water (Accessed 11/27/2019). Cancer-based RSLs were adjusted to a target risk of 1E-05 per agreement with the Arizona Department of Environmental Quality.

THQ = target hazard quotient (noncancer)

TR = target risk

UCL = upper confidence limit

Table K-12
Risk Summary
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Exposure Scenario	Area	Exposure Medium	Total ELCR[1]	Primary Contributors [2]	Total ELCR for Site-Related COPCs[3]	Site-related Primary Contributor[3]	Hazard Index	Primary Contributors [2]
Industrial	Onsite	Surface and Subsurface Soil (0-15 feet bgs)	2E-05	arsenic, chromium, BAP TEQ, naphthalene	1E-05	arsenic (5-10 bgs only), BAP TEQ, naphthalene	0.2	none
		Deep Soil (>15 feet bgs)	1E-05	arsenic, chromium	5E-07	none	0.07	none
	Background (Offsite)	Surface and Subsurface Soil (0-15 feet bgs)	7E-06	arsenic, chromium	N/A	N/A	0.05	none
		Deep Soil (>15 feet bgs)	1E-05	arsenic, chromium	N/A	N/A	0.05	none
Residential	Onsite	Surface and Subsurface Soil (0-15 feet bgs)	2E-04	arsenic, chromium, BAP TEQ, naphthalene	2E-04	arsenic (5-10 ft bgs only), BAP TEQ, naphthalene	2	none
		Deep Soil (>15 feet bgs)	1E-04	arsenic, chromium, BAP TEQ	9E-06	none	0.9	none
	Background (Offsite)	Surface and Subsurface Soil (0-15 feet bgs)	7E-05	arsenic, chromium, BAP TEQ	N/A	N/A	0.7	none
		Deep Soil (>15 feet bgs)	1E-04	arsenic, chromium, BAP TEQ	N/A	N/A	0.7	none
	N/A	Groundwater	3E-07	none	N/A	none	0.03	none

Notes:

1. ELCR with BAP TEQ, ND = 1/2*RL is presented.

2. Primary contributors are identified if individual COPC ELCR > 1E-06 or HQ > 1.

3. Based on background risk estimates and statistical comparsion (Section 4), arsenic is not considered site related in 0 to 5 feet bgs and in deep (> 15 feet bgs) soil. For chromium, risks were calculated using hexavalent chromium. Based on background risk estimates, chromium is not considered site related in surface and subsurface soil, and deep soil.

BAP TEQ = benzo(a)pyrene toxicity equivalent concentration
bgs = below ground surface
COPC = chemical of potential concern
ELCR = excess lifetime cancer risk
HQ = hazard quotient
RL = Reporting limit

Table K-13
Chemicals of Concern
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Exposure Scenario	Area	Exposure Medium	Chemical of Concern	Basis[1]
Industrial	Onsite	Surface and Subsurface Soil (0-15 feet bgs)	arsenic, BAP TEQ, naphthalene	Arsenic (5-10 ft bgs), BAP TEQ and naphthalene for cancer risk (ELCR).
		Deep Soil (>15 feet bgs)	none	Total cancer risk estimate (ELCR)/non-cancer hazard estimate (HI) less than 1E-05/1
Residential	Onsite	Surface and Subsurface Soil (0-15 feet bgs)	arsenic, BAP TEQ, naphthalene	Arsenic (5-10 ft bgs), BAP TEQ and naphthalene for cancer risk (ELCR).
		Deep Soil (>15 feet bgs)	none	Total cancer risk estimate (ELCR)/non-cancer hazard estimate (HI) less than 1E-05/1
	N/A	Groundwater	none	Total cancer risk estimate (ELCR)/non-cancer hazard estimate (HI) less than 1E-05/1

Notes:
1. COCs identified if total ELCR > 1E-05 or HI > 1 and individual chemical ELCR > 1E_06 or HQ > 1.
BAP TEQ = benzo(a)pyrene toxicity equivalent concentration
bgs = below ground surface
COC = chemical concern
ELCR = excess lifetime cancer risk
HQ = hazard quotient

Attachment 1

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B13	Onsite	N	31-Oct-19	D-B13-1.0-1.5	1.0-1.5	0-15	PAHs	Benzo(a)pyrene	28.9	J	Y
B13	Onsite	N	31-Oct-19	D-B13-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(a)pyrene	9.99		Y
B13	Onsite	N	31-Oct-19	D-B13-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	3.21		Y
B13	Onsite	N	31-Oct-19	D-B13-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(a)pyrene	11.1		Y
B13	Onsite	N	31-Oct-19	D-B13-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	2.44		Y
B13	Onsite	N	31-Oct-19	D-B13-1.0-1.5	1.0-1.5	0-15	PAHs	Benzo(b)fluoranthene	26.4	J	Y
B13	Onsite	N	31-Oct-19	D-B13-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(b)fluoranthene	10		Y
B13	Onsite	N	31-Oct-19	D-B13-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	3.49		Y
B13	Onsite	N	31-Oct-19	D-B13-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(b)fluoranthene	10.3		Y
B13	Onsite	N	31-Oct-19	D-B13-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	2.39		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	Metals	Arsenic	8.7		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.0-2.5	0-15	Metals	Arsenic	16.4		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	9.69	J	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	Metals	Arsenic	20.7	J	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	Metals	Arsenic	21.8		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	16.3		Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	Metals	Arsenic	9.18		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	Metals	Arsenic	15.4		Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	25.8		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	Metals	Arsenic	16.7		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	22		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	Metals	Arsenic	13.9		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	Metals	Arsenic	15.4		Y
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	Metals	Arsenic	13.8		N
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	24.1		Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	Metals	Arsenic	21.2		Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	20.7		Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	Metals	Arsenic	9.02		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	16.1		N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	Metals	Arsenic	23.1		Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	9.21		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	Metals	Arsenic	7.22		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	15.9	J	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	15.1		Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	Metals	Arsenic	9.51		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	12.6		Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	Metals	Arsenic	11.5		N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	9.78		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	Metals	Arsenic	9.08		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	17.6		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	12.8		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	Metals	Arsenic	8.73		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	7.13		N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	Metals	Arsenic	10.3		Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	8.49		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	Metals	Arsenic	7.47		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	20.6		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	9.04		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	Metals	Arsenic	11.3		N
B34	Offsite	FD	28-Oct-19	D-FD01-102819	0-0	0-15	Metals	Arsenic	14.8		Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	Metals	Arsenic	9.45		Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	15.7		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	Metals	Arsenic	7.69		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	Metals	Arsenic	13		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	Metals	Arsenic	14.6		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	Metals	Barium	148		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.0-2.5	0-15	Metals	Barium	65.7		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	Metals	Barium	190		N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	Metals	Barium	215		Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	Metals	Barium	138		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	Metals	Barium	39.5		Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	Metals	Barium	111		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	Metals	Barium	127		Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	Metals	Barium	245		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	Metals	Barium	150		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	Metals	Barium	146		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	Metals	Barium	70.5		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	Metals	Barium	426	J	Y
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	Metals	Barium	142	J	N
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	Metals	Barium	151		Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	Metals	Barium	171		Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	Metals	Barium	84.7	J	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	Metals	Barium	93.7		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	Metals	Barium	84.3		N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	Metals	Barium	110		Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	Metals	Barium	94.4		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	Metals	Barium	62.9		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	Metals	Barium	178		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	Metals	Barium	607		Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	Metals	Barium	139		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	Metals	Barium	133		N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	Metals	Barium	162		Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	Metals	Barium	112		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	Metals	Barium	186		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	Metals	Barium	143		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	Metals	Barium	211		Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	Metals	Barium	176		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	Metals	Barium	107		N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	Metals	Barium	114		Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	Metals	Barium	156		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	Metals	Barium	149		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	Metals	Barium	158		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	Metals	Barium	65.1		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	Metals	Barium	208	J	Y
B34	Offsite	FD	28-Oct-19	D-FD01-102819	0-0	0-15	Metals	Barium	76.4	J	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	Metals	Barium	104		Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	Metals	Barium	195		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	Metals	Barium	181		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	Metals	Barium	174		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	Metals	Barium	132		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	Metals	Cadmium	1.89	U	Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.0-2.5	0-15	Metals	Cadmium	1.67	U	Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	2	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	Metals	Cadmium	2	U	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	Metals	Cadmium	1.89	U	Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	1.89	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	Metals	Cadmium	1.92	U	Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	Metals	Cadmium	1.96	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	1.92	U	Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	Metals	Cadmium	2	U	Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	2	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	Metals	Cadmium	2	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	Metals	Cadmium	2	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	Metals	Cadmium	1.79	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	1.67	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	Metals	Cadmium	1.69	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	1.75	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	Metals	Cadmium	1.96	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	1.89	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	Metals	Cadmium	1.72	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	2	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	Metals	Cadmium	1.82	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	1.85	U	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	1.92	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	Metals	Cadmium	1.85	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	1.85	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	Metals	Cadmium	1.89	U	N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	1.85	U	Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	Metals	Cadmium	1.92	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	1.96	U	Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	1.82	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	Metals	Cadmium	2	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	1.85	U	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	Metals	Cadmium	1.67	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	1.67	U	Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	Metals	Cadmium	1.85	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	2.78		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	1.67	U	Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	Metals	Cadmium	1.92	U	N
B34	Offsite	FD	28-Oct-19	D-FD01-102819	0-0	0-15	Metals	Cadmium	1.72	U	Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	Metals	Cadmium	1.92	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	2	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	Metals	Cadmium	1.89	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	Metals	Cadmium	1.89	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	Metals	Cadmium	1.85	U	Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	Metals	Chromium	10		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.0-2.5	0-15	Metals	Chromium	8.37		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	8.67	J	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	Metals	Chromium	16.6	J	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	Metals	Chromium	11.5		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	8.93		Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	Metals	Chromium	9.8		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	Metals	Chromium	13.1		Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	9.75		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	Metals	Chromium	13.6		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	22.6		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	Metals	Chromium	8.01		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	Metals	Chromium	8.79		N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	Metals	Chromium	9.14		Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	11.8		Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	Metals	Chromium	10.3		Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	16.5		Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	Metals	Chromium	6.96		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	9.3		N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	Metals	Chromium	11.6		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	10.3		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	Metals	Chromium	6.16		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	18.1	J	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	12.6		Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	Metals	Chromium	10.4		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	10.2		N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	Metals	Chromium	11.5		Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	8.93		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	Metals	Chromium	10.3		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	11.4		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	8.25		Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	Metals	Chromium	9.26		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	8.2	J	Y
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	Metals	Chromium	4.01	J	N
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	7.09		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	Metals	Chromium	8.64		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	14		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	9.26		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	Metals	Chromium	11		Y
B34	Offsite	FD	28-Oct-19	D-FD01-102819	0-0	0-15	Metals	Chromium	10.5		N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	Metals	Chromium	10.6		Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	6.74		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	Metals	Chromium	10.1		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	Metals	Chromium	14.1		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	Metals	Chromium	11.6		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	Metals	Lead	25.5		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.0-2.5	0-15	Metals	Lead	25.2		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	Metals	Lead	38.1	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	Metals	Lead	15.6	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	Metals	Lead	17.5		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	Metals	Lead	13.3		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	Metals	Lead	50.1		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	Metals	Lead	11.2		Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	Metals	Lead	117		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	Metals	Lead	25.7		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	Metals	Lead	32.3		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	Metals	Lead	16.1		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	Metals	Lead	11.8		N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	Metals	Lead	12.2		Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	Metals	Lead	12		Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	Metals	Lead	12.3		Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	Metals	Lead	11.1		Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	Metals	Lead	45.9		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	Metals	Lead	10.9		N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	Metals	Lead	18.2		Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	Metals	Lead	9.89		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	Metals	Lead	22.2		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	Metals	Lead	32.8	J	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	Metals	Lead	12.6		Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	Metals	Lead	40.1		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	Metals	Lead	26.8	J	N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	Metals	Lead	52.3	J	Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	Metals	Lead	36.8		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	Metals	Lead	34.8		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	Metals	Lead	98.2		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	Metals	Lead	6.48		Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	Metals	Lead	48.3		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	Metals	Lead	62.5		Y
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	Metals	Lead	40.5		N
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	Metals	Lead	27.7		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	Metals	Lead	29.7		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	Metals	Lead	222		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	Metals	Lead	11.7		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	Metals	Lead	41.3	J	Y
B34	Offsite	FD	28-Oct-19	D-FD01-102819	0-0	0-15	Metals	Lead	12.6	J	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	Metals	Lead	14.1		Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	Metals	Lead	7.7		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	Metals	Lead	30.3		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	Metals	Lead	29.9	J	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	Metals	Lead	24.1		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	Metals	Mercury	0.0202		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.0-2.5	0-15	Metals	Mercury	0.0219		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.0237	U	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	Metals	Mercury	0.0172	UJ	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	Metals	Mercury	0.0179	U	Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0196	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	Metals	Mercury	0.0734		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	Metals	Mercury	0.0189	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.0263		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	Metals	Mercury	0.0172	U	Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0189	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	Metals	Mercury	0.0227		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	Metals	Mercury	0.0182	U	Y
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	Metals	Mercury	0.0185	U	N
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.0172	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	Metals	Mercury	0.0196	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0185	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	Metals	Mercury	0.0513		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.0185	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	Metals	Mercury	0.0167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0185	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	Metals	Mercury	0.0574		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.0494		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0192	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	Metals	Mercury	0.0249		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.0182	UJ	N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	Metals	Mercury	0.0208	J	Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.025		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	Metals	Mercury	0.0211		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.228		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0185	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	Metals	Mercury	0.0294		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.0492	J	Y
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	Metals	Mercury	0.0192	UJ	N
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0336		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	Metals	Mercury	0.0289		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.242		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0196	U	Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	Metals	Mercury	0.0288	J	Y
B34	Offsite	FD	28-Oct-19	D-FD01-102819	0-0	0-15	Metals	Mercury	0.0185	UJ	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	Metals	Mercury	0.0196	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0175	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	Metals	Mercury	0.0268		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	Metals	Mercury	0.000228		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	Metals	Mercury	0.0196	U	Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	Metals	Selenium	1.89	U	Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.0-2.5	0-15	Metals	Selenium	1.67	U	Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	2	U	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	Metals	Selenium	2	U	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	Metals	Selenium	1.89	U	Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	1.89	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	Metals	Selenium	1.92	U	Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	Metals	Selenium	1.96	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.92	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	Metals	Selenium	2	U	Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	2	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	Metals	Selenium	2	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	Metals	Selenium	2	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	Metals	Selenium	1.79	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.67	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	Metals	Selenium	1.69	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	1.75	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	Metals	Selenium	1.96	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.89	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	Metals	Selenium	1.72	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	2	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	Metals	Selenium	1.82	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.85	U	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	1.92	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	Metals	Selenium	1.85	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.85	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	Metals	Selenium	1.89	U	N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	1.85	U	Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	Metals	Selenium	1.92	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.96	U	Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	1.82	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	Metals	Selenium	2	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.85	U	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	Metals	Selenium	1.67	U	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	1.67	U	Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	Metals	Selenium	1.85	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.89	U	Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	1.67	U	Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	Metals	Selenium	1.92	U	N
B34	Offsite	FD	28-Oct-19	D-FD01-102819	0-0	0-15	Metals	Selenium	1.72	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	Metals	Selenium	1.92	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	2	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	Metals	Selenium	1.89	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	Metals	Selenium	1.89	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	Metals	Selenium	1.85	U	Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	Metals	Silver	1.89	U	Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.0-2.5	0-15	Metals	Silver	1.67	U	Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	Metals	Silver	2	U	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	Metals	Silver	2	U	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	Metals	Silver	1.89	U	Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	Metals	Silver	1.89	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	Metals	Silver	1.92	U	Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	Metals	Silver	1.96	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.92	U	Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	Metals	Silver	2	U	Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	Metals	Silver	2	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	Metals	Silver	2	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	Metals	Silver	2	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	Metals	Silver	1.79	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.67	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	Metals	Silver	1.69	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	Metals	Silver	1.75	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	Metals	Silver	1.96	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.89	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	Metals	Silver	1.72	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	Metals	Silver	2	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	Metals	Silver	1.82	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.85	UJ	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	Metals	Silver	1.92	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	Metals	Silver	1.85	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.85	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	Metals	Silver	1.89	U	N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	Metals	Silver	1.85	U	Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	Metals	Silver	1.92	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.96	U	Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	Metals	Silver	1.82	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	Metals	Silver	2	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.85	U	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	Metals	Silver	1.67	U	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	Metals	Silver	1.67	U	Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	Metals	Silver	1.85	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.89	U	Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	Metals	Silver	1.67	U	Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	Metals	Silver	1.92	U	N
B34	Offsite	FD	28-Oct-19	D-FD01-102819	0-0	0-15	Metals	Silver	1.72	U	Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	Metals	Silver	1.92	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	Metals	Silver	2	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	Metals	Silver	1.89	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	Metals	Silver	1.89	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	Metals	Silver	1.85	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,1,2-Tetrachloroethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,1,1,2-Tetrachloroethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,1,2-Tetrachloroethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,1,2-Tetrachloroethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,1,1,2-Tetrachloroethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,1,2-Tetrachloroethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,1-Trichloroethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,1,1-Trichloroethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,1-Trichloroethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,1-Trichloroethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,1,1-Trichloroethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,1-Trichloroethane	0.324	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,2,2-Tetrachloroethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,1,2,2-Tetrachloroethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,2,2-Tetrachloroethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,2,2-Tetrachloroethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,1,2,2-Tetrachloroethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,2,2-Tetrachloroethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,2-Trichloroethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,1,2-Trichloroethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,2-Trichloroethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,2-Trichloroethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,1,2-Trichloroethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,1,2-Trichloroethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloroethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,1-Dichloroethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloroethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloroethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,1-Dichloroethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloroethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloroethene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,1-Dichloroethene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloroethene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloroethene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,1-Dichloroethene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloroethene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloropropene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,1-Dichloropropene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloropropene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloropropene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,1-Dichloropropene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,1-Dichloropropene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,3-Trichlorobenzene	0.259	U	N

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2,3-Trichlorobenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,3-Trichlorobenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,3-Trichlorobenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2,3-Trichlorobenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,3-Trichlorobenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,3-Trichloropropane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2,3-Trichloropropane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,3-Trichloropropane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,3-Trichloropropane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2,3-Trichloropropane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,3-Trichloropropane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,4-Trichlorobenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2,4-Trichlorobenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,4-Trichlorobenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,4-Trichlorobenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2,4-Trichlorobenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,4-Trichlorobenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,4-Trimethylbenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2,4-Trimethylbenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,4-Trimethylbenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,4-Trimethylbenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2,4-Trimethylbenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2,4-Trimethylbenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dibromo-3-Chloropropane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2-Dibromo-3-Chloropropane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dibromo-3-Chloropropane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dibromo-3-Chloropropane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2-Dibromo-3-Chloropropane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dibromo-3-Chloropropane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dibromoethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2-Dibromoethane	0.226	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dibromoethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dibromoethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2-Dibromoethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dibromoethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichlorobenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2-Dichlorobenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichlorobenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichlorobenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2-Dichlorobenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichlorobenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichloroethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2-Dichloroethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichloroethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichloroethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2-Dichloroethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichloroethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichloropropane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,2-Dichloropropane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichloropropane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichloropropane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,2-Dichloropropane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,2-Dichloropropane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,3,5-Trimethylbenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,3,5-Trimethylbenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,3,5-Trimethylbenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,3,5-Trimethylbenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,3,5-Trimethylbenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,3,5-Trimethylbenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Butadiene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,3-Butadiene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Butadiene	0.245	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Butadiene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,3-Butadiene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Butadiene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Dichlorobenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,3-Dichlorobenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Dichlorobenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Dichlorobenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,3-Dichlorobenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Dichlorobenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Dichloropropane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,3-Dichloropropane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Dichloropropane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Dichloropropane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,3-Dichloropropane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,3-Dichloropropane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	1,4-Dichlorobenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	1,4-Dichlorobenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	1,4-Dichlorobenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	1,4-Dichlorobenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	1,4-Dichlorobenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	1,4-Dichlorobenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	2,2-Dichloropropane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	2,2-Dichloropropane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	2,2-Dichloropropane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	2,2-Dichloropropane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	2,2-Dichloropropane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	2,2-Dichloropropane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	2-Butanone	1.04	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	2-Butanone	0.906	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	2-Butanone	0.978	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	2-Butanone	0.853	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	2-Butanone	1.06	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	2-Butanone	1.3	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	2-Chlorotoluene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	2-Chlorotoluene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	2-Chlorotoluene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	2-Chlorotoluene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	2-Chlorotoluene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	2-Chlorotoluene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	2-Hexanone	2.59	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	2-Hexanone	2.26	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	2-Hexanone	2.45	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	2-Hexanone	2.13	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	2-Hexanone	2.66	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	2-Hexanone	3.24	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	4-Chlorotoluene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	4-Chlorotoluene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	4-Chlorotoluene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	4-Chlorotoluene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	4-Chlorotoluene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	4-Chlorotoluene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	4-Ethyltoluene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	4-Ethyltoluene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	4-Ethyltoluene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	4-Ethyltoluene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	4-Ethyltoluene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	4-Ethyltoluene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	4-Methyl-2-Pentanone	2.59	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	4-Methyl-2-Pentanone	2.26	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	4-Methyl-2-Pentanone	2.45	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	4-Methyl-2-Pentanone	2.13	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	4-Methyl-2-Pentanone	2.66	U	N

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	4-Methyl-2-Pentanone	3.24	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Acetone	5.18	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Acetone	4.53	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Acetone	4.89	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Acetone	4.27	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Acetone	5.32	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Acetone	6.48	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Benzene	0.0518	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Benzene	0.0453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Benzene	0.0489	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Benzene	0.0427	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Benzene	0.0532	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Benzene	0.0648	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Bromobenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Bromobenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Bromobenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Bromobenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Bromobenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Bromobenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Bromochloromethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Bromochloromethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Bromochloromethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Bromochloromethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Bromochloromethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Bromochloromethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Bromodichloromethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Bromodichloromethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Bromodichloromethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Bromodichloromethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Bromodichloromethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Bromodichloromethane	0.324	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Bromoform	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Bromoform	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Bromoform	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Bromoform	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Bromoform	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Bromoform	0.324	UJ	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Bromomethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Bromomethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Bromomethane	0.245	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Bromomethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Bromomethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Bromomethane	0.324	UJ	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Carbon Disulfide	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Carbon Disulfide	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Carbon Disulfide	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Carbon Disulfide	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Carbon Disulfide	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Carbon Disulfide	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Carbon Tetrachloride	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Carbon Tetrachloride	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Carbon Tetrachloride	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Carbon Tetrachloride	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Carbon Tetrachloride	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Carbon Tetrachloride	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Chlorobenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Chlorobenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Chlorobenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Chlorobenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Chlorobenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Chlorobenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Chloroethane	0.518	U	N

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Chloroethane	0.453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Chloroethane	0.489	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Chloroethane	0.427	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Chloroethane	0.532	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Chloroethane	0.648	UJ	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Chloroform	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Chloroform	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Chloroform	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Chloroform	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Chloroform	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Chloroform	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Chloromethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Chloromethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Chloromethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Chloromethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Chloromethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Chloromethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	cis-1,2-Dichloroethene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	cis-1,2-Dichloroethene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	cis-1,2-Dichloroethene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	cis-1,2-Dichloroethene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	cis-1,2-Dichloroethene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	cis-1,2-Dichloroethene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	cis-1,3-Dichloropropene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	cis-1,3-Dichloropropene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	cis-1,3-Dichloropropene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	cis-1,3-Dichloropropene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	cis-1,3-Dichloropropene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	cis-1,3-Dichloropropene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Cyclohexane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Cyclohexane	0.226	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Cyclohexane	0.245	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Cyclohexane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Cyclohexane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Cyclohexane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Dibromochloromethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Dibromochloromethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Dibromochloromethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Dibromochloromethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Dibromochloromethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Dibromochloromethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Dibromomethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Dibromomethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Dibromomethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Dibromomethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Dibromomethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Dibromomethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Dichlorodifluoromethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Dichlorodifluoromethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Dichlorodifluoromethane	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Dichlorodifluoromethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Dichlorodifluoromethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Dichlorodifluoromethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Dicyclopentadiene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Dicyclopentadiene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Dicyclopentadiene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Dicyclopentadiene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Dicyclopentadiene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Dicyclopentadiene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Ethylbenzene	0.0518	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Ethylbenzene	0.0453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Ethylbenzene	0.0489	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Ethylbenzene	0.0427	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Ethylbenzene	0.0532	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Ethylbenzene	0.0648	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Hexachlorobutadiene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Hexachlorobutadiene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Hexachlorobutadiene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Hexachlorobutadiene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Hexachlorobutadiene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Hexachlorobutadiene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Iodomethane (Methyl Iodide)	1.04	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Iodomethane (Methyl Iodide)	0.906	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Iodomethane (Methyl Iodide)	0.978	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Iodomethane (Methyl Iodide)	0.853	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Iodomethane (Methyl Iodide)	1.06	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Iodomethane (Methyl Iodide)	1.3	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Isopropylbenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Isopropylbenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Isopropylbenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Isopropylbenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Isopropylbenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Isopropylbenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	m,p-Xylenes	0.104	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	m,p-Xylenes	0.0906	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	m,p-Xylenes	0.0978	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	m,p-Xylenes	0.0853	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	m,p-Xylenes	0.106	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	m,p-Xylenes	0.13	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Methylcyclohexane	0.518	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Methylcyclohexane	0.453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Methylcyclohexane	0.489	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Methylcyclohexane	0.427	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Methylcyclohexane	0.532	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Methylcyclohexane	0.648	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Methylene Chloride	1.04	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Methylene Chloride	0.906	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Methylene Chloride	0.978	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Methylene Chloride	0.853	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Methylene Chloride	1.06	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Methylene Chloride	1.3	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	MTBE	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	MTBE	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	MTBE	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	MTBE	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	MTBE	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	MTBE	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Naphthalene	0.518	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Naphthalene	0.453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Naphthalene	0.489	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Naphthalene	0.427	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Naphthalene	0.532	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Naphthalene	0.648	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	n-Butylbenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	n-Butylbenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	n-Butylbenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	n-Butylbenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	n-Butylbenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	n-Butylbenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	n-Hexane	0.518	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	n-Hexane	0.453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	n-Hexane	0.489	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	n-Hexane	0.427	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	n-Hexane	0.532	U	N

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	n-Hexane	0.648	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	n-Propylbenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	n-Propylbenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	n-Propylbenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	n-Propylbenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	n-Propylbenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	n-Propylbenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	o-Xylene	0.0518	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	o-Xylene	0.0453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	o-Xylene	0.0489	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	o-Xylene	0.0427	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	o-Xylene	0.0532	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	o-Xylene	0.0648	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	p-Cymene (p-Isopropyltoluene)	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	p-Cymene (p-Isopropyltoluene)	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	p-Cymene (p-Isopropyltoluene)	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	p-Cymene (p-Isopropyltoluene)	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	p-Cymene (p-Isopropyltoluene)	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	p-Cymene (p-Isopropyltoluene)	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Propene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Propene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Propene	0.245	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Propene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Propene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Propene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Sec-Butylbenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Sec-Butylbenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Sec-Butylbenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Sec-Butylbenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Sec-Butylbenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Sec-Butylbenzene	0.324	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Styrene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Styrene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Styrene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Styrene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Styrene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Styrene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	tert-Butylbenzene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	tert-Butylbenzene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	tert-Butylbenzene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	tert-Butylbenzene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	tert-Butylbenzene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	tert-Butylbenzene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Tetrachloroethylene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Tetrachloroethylene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Tetrachloroethylene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Tetrachloroethylene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Tetrachloroethylene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Tetrachloroethylene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Toluene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Toluene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Toluene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Toluene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Toluene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Toluene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Total Xylenes	0.0518	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Total Xylenes	0.0453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Total Xylenes	0.0489	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Total Xylenes	0.0427	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Total Xylenes	0.0532	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Total Xylenes	0.0648	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	trans-1,2-dichloroethene	0.259	U	N

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	trans-1,2-dichloroethene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	trans-1,2-dichloroethene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	trans-1,2-dichloroethene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	trans-1,2-dichloroethene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	trans-1,2-dichloroethene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	trans-1,3-dichloropropene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	trans-1,3-dichloropropene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	trans-1,3-dichloropropene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	trans-1,3-dichloropropene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	trans-1,3-dichloropropene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	trans-1,3-dichloropropene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Trichloroethene	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Trichloroethene	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Trichloroethene	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Trichloroethene	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Trichloroethene	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Trichloroethene	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Trichlorofluoromethane	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Trichlorofluoromethane	0.226	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Trichlorofluoromethane	0.245	UJ	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Trichlorofluoromethane	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Trichlorofluoromethane	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Trichlorofluoromethane	0.324	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Vinyl Acetate	0.0518	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Vinyl Acetate	0.0453	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Vinyl Acetate	0.0489	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Vinyl Acetate	0.0427	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Vinyl Acetate	0.0532	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Vinyl Acetate	0.648	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	VOCs	Vinyl Chloride	0.259	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	VOCs	Vinyl Chloride	0.226	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	VOCs	Vinyl Chloride	0.245	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	VOCs	Vinyl Chloride	0.213	U	Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	VOCs	Vinyl Chloride	0.266	U	N
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	VOCs	Vinyl Chloride	0.324	U	Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Acenaphthene	0.00834	U	Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Acenaphthene	0.00334	U	Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.00333	U	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Acenaphthene	0.00166	U	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Acenaphthene	0.00832	U	Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Acenaphthene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.0166	U	Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Acenaphthene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00835	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Acenaphthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Acenaphthene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Acenaphthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Acenaphthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Acenaphthene	0.0167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.00167	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Acenaphthene	0.00834	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00166	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Acenaphthene	0.00334	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.00833	U	N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Acenaphthene	0.00832	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00835	U	Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Acenaphthene	0.0167	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.00265	U	Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Acenaphthene	0.0167	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.00167	U	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Acenaphthene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Acenaphthene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.00333	U	Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00166	U	Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Acenaphthene	0.0167	U	N
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Acenaphthene	0.00166	U	Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Acenaphthene	0.0167	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthene	0.0167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthene	0.00167	U	Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.00834	U	Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Acenaphthylene	0.00979		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.0179	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Acenaphthylene	0.00166	U	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Acenaphthylene	0.00688		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.0239		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Acenaphthylene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.0325		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Acenaphthylene	0.0103		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00835	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Acenaphthylene	0.00167	U	N

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Acenaphthylene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Acenaphthylene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.0167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.00167	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Acenaphthylene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00284		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.0883		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.00226		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00166	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.00566		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.0154		Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Acenaphthylene	0.0125		N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.0336		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.0167	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.0436		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.0167	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.00212		N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Acenaphthylene	0.00333		Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00289		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.0241		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00292		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.0167	U	N
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Acenaphthylene	0.00166	U	Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Acenaphthylene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.00167	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Acenaphthylene	0.0167	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Acenaphthylene	0.0167	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Acenaphthylene	0.0107		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Anthracene	0.0096		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Anthracene	0.00752		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.0165	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Anthracene	0.00166	U	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Anthracene	0.00478		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Anthracene	0.0228		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Anthracene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.0276		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Anthracene	0.00711		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00835	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Anthracene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Anthracene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Anthracene	0.0206		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.00206	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Anthracene	0.00167	UJ	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Anthracene	0.0726		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.00167	U	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00166	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Anthracene	0.00735		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.00931		N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Anthracene	0.0115		Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.0219		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Anthracene	0.0167	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.0254		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Anthracene	0.0167	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.00219		N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Anthracene	0.00279		Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00379		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Anthracene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.0326		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00302		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Anthracene	0.0167	U	N
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Anthracene	0.00166	U	Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Anthracene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00167	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Anthracene	0.0167	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Anthracene	0.0167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Anthracene	0.00893		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.0425		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Benzo(a)anthracene	0.0276		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.0643	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.00597	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Benzo(a)anthracene	0.0195		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.0688		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.0907		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(a)anthracene	0.0199		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.0247		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(a)anthracene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(a)anthracene	0.00167	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.0999		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.0104	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.00596	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.287		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.00661		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.00596	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.0235		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.0376		N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.0439		Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.0705		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.0182		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.115		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.0233		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.00468	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.00975	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.0134		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.0745		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.00986		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.0335	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Benzo(a)anthracene	0.00166	UJ	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.00405		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Benzo(a)anthracene	0.0211		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)anthracene	0.0225		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)anthracene	0.0325		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.0583		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Benzo(a)pyrene	0.0474		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.115	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.0106	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Benzo(a)pyrene	0.0353		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.101		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.113		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(a)pyrene	0.0248		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.0282		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.0021		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(a)pyrene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.116		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.0177	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.00826	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.392		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.00983		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.00735	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.035		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.0672		N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.0719		Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.115		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.0216		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.217		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.0319		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.00652	J	N

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.0176	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.0192		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.00972		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.112		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.0135		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.0467	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Benzo(a)pyrene	0.00234	J	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.00228	J	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.00804		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Benzo(a)pyrene	0.0285		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(a)pyrene	0.0385		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(a)pyrene	0.064		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.0912		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Benzo(b)fluoranthene	0.0698		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.179	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.0149	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Benzo(b)fluoranthene	0.0528		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.154		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.164		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(b)fluoranthene	0.0379		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.0419		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.00294		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(b)fluoranthene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(b)fluoranthene	0.00184		Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.191		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.0291	J	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.0119	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.00248		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.456		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.0122	J	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.0102	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.0644		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.0795		N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.116		Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.147		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.0355		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.274		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.0581		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.0113	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.026	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.0339		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.0184		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.169		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.0286		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.0888	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.00385	J	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.00419	J	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.00966		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Benzo(b)fluoranthene	0.0541		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(b)fluoranthene	0.0501	J	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(b)fluoranthene	0.0898		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.0386		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Benzo(g,h,i)perylene	0.0267		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.0661	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00603	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Benzo(g,h,i)perylene	0.021		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.0664		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.101		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(g,h,i)perylene	0.0167		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.0237		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.00232		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(g,h,i)perylene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.0595		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.0201	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00581	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.265		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.0102		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00666	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.021		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.0744		Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.0533		N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.105		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.0206		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.109		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.032		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00345	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00904	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.011		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.0102		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.051		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00871		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.0371	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.00166	UJ	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.00588		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Benzo(g,h,i)perylene	0.0247		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(g,h,i)perylene	0.0521		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(g,h,i)perylene	0.0502		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.0261		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Benzo(k)fluoranthene	0.019		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.0389	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.00427	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Benzo(k)fluoranthene	0.0151		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.0454		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.0368		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(k)fluoranthene	0.0122		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00974		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Benzo(k)fluoranthene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.051		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.00705	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.00307	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.142		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.00358		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00267	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.0192		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.0232		N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.0307		Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.0405		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.0167	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.081		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.0167	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.00328	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.00721	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00799		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.0575		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00756		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.0221	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.00166	UJ	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.00302		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Benzo(k)fluoranthene	0.0167	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Benzo(k)fluoranthene	0.0167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Benzo(k)fluoranthene	0.0255		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Chrysene	0.0591		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Chrysene	0.0356		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.0865	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Chrysene	0.00728	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Chrysene	0.025		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Chrysene	0.0859		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Chrysene	0.00167	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.106		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Chrysene	0.0253		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.0288		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Chrysene	0.00178		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Chrysene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Chrysene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Chrysene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Chrysene	0.12		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.0148	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Chrysene	0.00764	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Chrysene	0.325		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.00777		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.00635	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Chrysene	0.0335		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.0484		N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Chrysene	0.0631		Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.0867		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Chrysene	0.0242		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.149		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Chrysene	0.0342		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.00657	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Chrysene	0.013	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.0176		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Chrysene	0.0113		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.0967		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.0143		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Chrysene	0.0504	J	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Chrysene	0.0021	J	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Chrysene	0.00191	J	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.00499		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Chrysene	0.0311		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Chrysene	0.0343	J	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Chrysene	0.0474		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00834	U	Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00334	U	Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00333	U	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00832	U	Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.0166	U	Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00835	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.045		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00334	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00833	U	N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00832	U	Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00835	U	Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00245		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00333	U	Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00253		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	N
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Fluoranthene	0.112		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Fluoranthene	0.0757		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.181	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Fluoranthene	0.0151	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Fluoranthene	0.0595		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Fluoranthene	0.169		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Fluoranthene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.244		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Fluoranthene	0.0625		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.0597		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Fluoranthene	0.00205		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Fluoranthene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Fluoranthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Fluoranthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Fluoranthene	0.199		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.0261	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Fluoranthene	0.0125	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.00246		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Fluoranthene	0.603		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.0157		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.00866	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Fluoranthene	0.0624		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.14		Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Fluoranthene	0.119		N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.226		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Fluoranthene	0.0413		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.309		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Fluoranthene	0.058		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.0103	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Fluoranthene	0.0258	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.0288		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Fluoranthene	0.0192		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.191		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.0241		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Fluoranthene	0.0847	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Fluoranthene	0.00468	J	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Fluoranthene	0.00314	J	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.0101		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Fluoranthene	0.0513		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Fluoranthene	0.0622	J	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Fluoranthene	0.0934		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Fluorene	0.00834	U	Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Fluorene	0.00334	U	Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.00333	U	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Fluorene	0.00166	U	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Fluorene	0.00167	U	Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Fluorene	0.00832	U	Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Fluorene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.0166	U	Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Fluorene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00835	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Fluorene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Fluorene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Fluorene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Fluorene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Fluorene	0.0167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.00167	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Fluorene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Fluorene	0.0405		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.00167	U	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00166	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Fluorene	0.00334	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.00833	U	N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Fluorene	0.00832	U	Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.0105		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Fluorene	0.0167	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.00748		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Fluorene	0.0167	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.00167	U	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Fluorene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00167	U	Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Fluorene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.00471		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00166	U	Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Fluorene	0.0167	U	N
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Fluorene	0.00166	U	Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Fluorene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00167	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Fluorene	0.0167	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Fluorene	0.0167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Fluorene	0.00167	U	Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0326		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0218		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0541	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00495	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0169		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0522		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0811		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0143		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0189		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0018		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0564		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0158	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00471	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.218		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00727		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00507	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0175		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0536		Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0441		N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0795		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0167	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0885		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0258		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00278	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00772	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00987		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0461		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00753		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0323	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	UJ	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00452		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0191		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0346		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.039		Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Naphthalene	0.0834	U	Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Naphthalene	0.0334	U	Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.0333	U	N
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Naphthalene	0.0166	U	Y
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Naphthalene	0.0832	U	Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Naphthalene	0.0167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.166	U	Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Naphthalene	0.0167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0835	U	Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Naphthalene	0.0166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Naphthalene	0.0167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Naphthalene	0.0166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Naphthalene	0.0167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Naphthalene	0.167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.0167	U	N
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0165	U	Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Naphthalene	0.0834	U	Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0166	U	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Naphthalene	0.0334	U	Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.0833	U	N
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Naphthalene	0.0832	U	Y
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0835	U	Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Naphthalene	0.167	U	Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.0168		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0167	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Naphthalene	0.167	U	Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.0167	U	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Naphthalene	0.0166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Naphthalene	0.0834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.0333	U	Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0166	U	Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Naphthalene	0.167	U	N
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Naphthalene	0.0166	U	Y
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Naphthalene	0.167	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Naphthalene	0.167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Naphthalene	0.0167	U	Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Phenanthrene	0.057		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Phenanthrene	0.0394		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.0744	J	Y
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Phenanthrene	0.00538	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Phenanthrene	0.026		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Phenanthrene	0.0945		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Phenanthrene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.162		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Phenanthrene	0.0539		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.0395		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Phenanthrene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Phenanthrene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Phenanthrene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Phenanthrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.00167	U	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Phenanthrene	0.0929		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.011	J	Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Phenanthrene	0.00619	J	N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.00169		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Phenanthrene	0.641		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.012		Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.00384	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Phenanthrene	0.0281		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.1		Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Phenanthrene	0.0498		N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.156		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Phenanthrene	0.0169		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.164		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Phenanthrene	0.0183		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.00484	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Phenanthrene	0.00975	J	Y
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.0107		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Phenanthrene	0.00834	U	Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.096		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.0102		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Phenanthrene	0.0273	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Phenanthrene	0.00198	J	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Phenanthrene	0.00167	UJ	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.00276		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Phenanthrene	0.0167	U	Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Phenanthrene	0.0182		Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Phenanthrene	0.0408		Y
B18	Offsite	N	27-Oct-19	D-B18-0-102719	0-0	0-15	PAHs	Pyrene	0.1		Y
B18	Offsite	N	28-Oct-19	D-B18-2.0-2.5	2.5-3.0	0-15	PAHs	Pyrene	0.105		Y
B18	Offsite	N	28-Oct-19	D-B18-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.25	J	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B18	Offsite	FD	28-Oct-19	D-FD03-102819	5.0-5.5	0-15	PAHs	Pyrene	0.0224	J	N
B18	Offsite	N	28-Oct-19	D-B18-7.0-7.5	7.0-7.5	0-15	PAHs	Pyrene	0.0872		Y
B18	Offsite	N	05-Nov-19	D-B18-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.00166	U	Y
B22	Offsite	N	27-Oct-19	D-B22-0-102719	0-0	0-15	PAHs	Pyrene	0.18		Y
B22	Offsite	N	29-Oct-19	D-B22-2.5-3.0	2.5-3.0	0-15	PAHs	Pyrene	0.00167	U	Y
B22	Offsite	N	29-Oct-19	D-B22-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.252		Y
B22	Offsite	N	29-Oct-19	D-B22-7.5-8.0	7.5-8.0	0-15	PAHs	Pyrene	0.064		Y
B22	Offsite	N	29-Oct-19	D-B22-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.0591		Y
B27	Offsite	N	27-Oct-19	D-B27-0-102719	0-0	0-15	PAHs	Pyrene	0.00275		Y
B27	Offsite	N	03-Nov-19	D-B27-2.5-3.0	2.5-3.0	0-15	PAHs	Pyrene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD01-110319	2.5-3.0	0-15	PAHs	Pyrene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-7.5-8.0	7.5-8.0	0-15	PAHs	Pyrene	0.00187		Y
B27	Offsite	N	03-Nov-19	D-B27-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.00167	U	Y
B28	Offsite	N	27-Oct-19	D-B28-0-102719	0-0	0-15	PAHs	Pyrene	0.179		Y
B28	Offsite	N	29-Oct-19	D-B28-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.0216		Y
B28	Offsite	FD	29-Oct-19	D-FD03-102919	5.0-5.5	0-15	PAHs	Pyrene	0.0131		N
B28	Offsite	N	29-Oct-19	D-B28-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.00246		Y
B29	Offsite	N	27-Oct-19	D-B29-0-102719	0-0	0-15	PAHs	Pyrene	0.75		Y
B29	Offsite	N	07-Nov-19	D-B29-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.0211	J	Y
B29	Offsite	N	07-Nov-19	D-B29-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.0107	J	Y
B30	Offsite	N	28-Oct-19	D-B30-0-102719	0-0	0-15	PAHs	Pyrene	0.0736		Y
B30	Offsite	N	01-Nov-19	D-B30-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.172		Y
B30	Offsite	FD	01-Nov-19	D-FD01-110119	5.0-5.5	0-15	PAHs	Pyrene	0.133		N
B30	Offsite	N	01-Nov-19	D-B30-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.266		Y
B31	Offsite	N	27-Oct-19	D-B31-0-102719	0-0	0-15	PAHs	Pyrene	0.0366		Y
B31	Offsite	N	28-Oct-19	D-B31-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.439		Y
B31	Offsite	N	06-Nov-19	D-B31-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.00167	U	Y
B32	Offsite	N	27-Oct-19	D-B32-0-102719	0-0	0-15	PAHs	Pyrene	0.0515		Y
B32	Offsite	N	28-Oct-19	D-B32-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.0123	J	N
B32	Offsite	FD	28-Oct-19	B-FD02-102819	5.0-5.5	0-15	PAHs	Pyrene	0.0358	J	Y

Attachment 2

Data Used in HHRA for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B32	Offsite	N	06-Nov-19	D-B32-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.0272		Y
B33	Offsite	N	27-Oct-19	D-B33-0-102719	0-0	0-15	PAHs	Pyrene	0.0175		Y
B33	Offsite	N	28-Oct-19	D-B33-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.244		Y
B33	Offsite	N	06-Nov-19	D-B33-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.0191		Y
B34	Offsite	N	27-Oct-19	D-B34-0-102719	0-0	0-15	PAHs	Pyrene	0.0729	J	Y
B34	Offsite	FD	27-Oct-19	D-FD01-102819	0-0	0-15	PAHs	Pyrene	0.00575	J	N
B34	Offsite	N	28-Oct-19	D-B34-5.0-5.5-102819	5.0-5.5	0-15	PAHs	Pyrene	0.00388	J	Y
B34	Offsite	N	06-Nov-19	D-B34-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.014		Y
B35	Offsite	N	27-Oct-19	D-B35-0-102719	0-0	0-15	PAHs	Pyrene	0.0442		Y
B35	Offsite	N	28-Oct-19	D-B35-5.0-5.5	5.0-5.5	0-15	PAHs	Pyrene	0.0733	J	Y
B35	Offsite	N	05-Nov-19	D-B35-10.0-10.5	10.0-10.5	0-15	PAHs	Pyrene	0.114		Y

Notes:

CAS = chemical abstract service

FD = field duplicate

J = estimated

mg/kg = milligram per kilogram

N= normal

PAH = polycyclic aromatic hydrocarbons

U = nondetect

VOC = volatile organic compound

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	21.1		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	16.4		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	23.1		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	Metals	Arsenic	18.1		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	Metals	Arsenic	4.16		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	21		Y
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	Metals	Arsenic	17.1		N
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	12.1		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	24.5		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	17.8		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	23		Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	Metals	Arsenic	20.9		N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	17.7		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	16.7		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	17.1		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	16.4		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	9.25		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	8.99		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	19.6		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	12.4		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	Metals	Arsenic	7.08		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	12.6		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	16.4		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	7.55		N
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	Metals	Arsenic	8.2		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	Metals	Arsenic	5.23		Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	Metals	Arsenic	7.22		N
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	Metals	Arsenic	8.13		Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	16.9		Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	Metals	Arsenic	18.2		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	Metals	Arsenic	8.17		Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	Metals	Barium	120		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	Metals	Barium	76.4		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	Metals	Barium	225		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	Metals	Barium	376		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	Metals	Barium	44.2		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	Metals	Barium	76		Y
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	Metals	Barium	75.5		N
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	Metals	Barium	70.5		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	Metals	Barium	185		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	Metals	Barium	209		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	Metals	Barium	284		Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	Metals	Barium	180		N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	Metals	Barium	181		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	Metals	Barium	250		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	Metals	Barium	131		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	Metals	Barium	130		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	Metals	Barium	246		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	Metals	Barium	36.9		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	Metals	Barium	232		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	Metals	Barium	64.3		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	Metals	Barium	89.3		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	Metals	Barium	88.8		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	Metals	Barium	290		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	Metals	Barium	43.7		N
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	Metals	Barium	46.1		Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	Metals	Barium	35.2		Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	Metals	Barium	55.4		N
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	Metals	Barium	68.3		Y
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	Metals	Barium	134		Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	Metals	Barium	906		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	Metals	Barium	54.5		Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.82	U	Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.96	U	Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.75	U	Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	Metals	Cadmium	1.92	U	Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	Metals	Cadmium	1.69	U	Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.79	U	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	Metals	Cadmium	1.75	U	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.75	U	Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.67	U	Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.75	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.96	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	Metals	Cadmium	1.79	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.89	U	Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.67	U	Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	2	U	Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.75	U	Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.69	U	Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.92	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.69	U	Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.89	U	Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	Metals	Cadmium	1.85	U	Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.67	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.96	U	Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.85	U	N
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	Metals	Cadmium	1.69	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	Metals	Cadmium	1.96	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	Metals	Cadmium	1.85	U	N
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	Metals	Cadmium	1.85	U	Y
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.67	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	Metals	Cadmium	1.96	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	Metals	Cadmium	1.67	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	Metals	Chromium	8.53		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	Metals	Chromium	11.8		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	Metals	Chromium	38.9		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	Metals	Chromium	49.2		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	Metals	Chromium	23.1		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	Metals	Chromium	6.13		N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	Metals	Chromium	8.37		Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	Metals	Chromium	18.7		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	Metals	Chromium	23.5		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	Metals	Chromium	32.2		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	Metals	Chromium	129		Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	Metals	Chromium	48.8		N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	Metals	Chromium	37.5		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	Metals	Chromium	7.87		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	Metals	Chromium	23.3		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	Metals	Chromium	20.1		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	Metals	Chromium	27.7		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	Metals	Chromium	18.7		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	Metals	Chromium	17.8		Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	Metals	Chromium	38.9		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	Metals	Chromium	28.5		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	Metals	Chromium	9.66		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	Metals	Chromium	5		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	Metals	Chromium	19.5		Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	Metals	Chromium	17.4		N
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	Metals	Chromium	21		Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	Metals	Chromium	11		N
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	Metals	Chromium	14.4		Y
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	Metals	Chromium	3.78		Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	Metals	Chromium	16.1		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	Metals	Chromium	9.34		Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	Metals	Lead	17.8		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	Metals	Lead	16.4		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	Metals	Lead	21.1		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	Metals	Lead	62.8		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	Metals	Lead	8.74		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	Metals	Lead	10.6		N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	Metals	Lead	11.8		Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	Metals	Lead	6.7		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	Metals	Lead	14		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	Metals	Lead	10.6		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	Metals	Lead	15.4		Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	Metals	Lead	10		N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	Metals	Lead	9.81		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	Metals	Lead	10.8		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	Metals	Lead	7.38		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	Metals	Lead	9.79		Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	Metals	Lead	4.67		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	Metals	Lead	5.25		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	Metals	Lead	53.8		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	Metals	Lead	10.7		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	Metals	Lead	8.11		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	Metals	Lead	12.7		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	Metals	Lead	11.7		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	Metals	Lead	10.5		N
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	Metals	Lead	22.3		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	Metals	Lead	10.9		Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	Metals	Lead	10.1		N
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	Metals	Lead	15.9		Y
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	Metals	Lead	9.47		Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	Metals	Lead	11.6		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	Metals	Lead	4.13		Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0175	U	Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0175	U	Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0185	U	Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	Metals	Mercury	0.0182	U	Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	Metals	Mercury	0.0172	U	Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0172	U	Y
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	Metals	Mercury	0.0185	U	N
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0185	U	Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0169	U	Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0167	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0182	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	Metals	Mercury	0.0169	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.02	U	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0169	U	Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0172	U	Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.189	U	Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0192	U	Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0235		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0192	U	Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	Metals	Mercury	0.0175	U	Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0172	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0172	U	Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0179	U	N
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	Metals	Mercury	0.0175	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	Metals	Mercury	0.0192	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	Metals	Mercury	0.0192	U	N
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	Metals	Mercury	0.0192	U	Y
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0185	UJ	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	Metals	Mercury	0.0189	UJ	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	Metals	Mercury	0.0192	UJ	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.82	U	Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.96	U	Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.75	U	Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	Metals	Selenium	1.92	U	Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	Metals	Selenium	1.69	U	Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.79	U	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	Metals	Selenium	1.75	U	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.75	U	Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.67	U	Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.75	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.96	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	Metals	Selenium	1.79	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.89	U	Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.67	U	Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	Metals	Selenium	2	U	Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.75	U	Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.69	U	Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.92	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.69	U	Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.89	U	Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	Metals	Selenium	1.85	U	Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.67	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.96	U	Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.85	U	N
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	Metals	Selenium	1.69	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	Metals	Selenium	1.96	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	Metals	Selenium	1.85	U	N
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	Metals	Selenium	1.85	U	Y
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.67	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	Metals	Selenium	1.96	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	Metals	Selenium	1.67	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.82	U	Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.96	U	Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.75	U	Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	Metals	Silver	1.92	U	Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	Metals	Silver	1.69	U	Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.79	U	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	Metals	Silver	1.75	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.75	U	Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.67	U	Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.75	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.96	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	Metals	Silver	1.79	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.89	U	Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.67	U	Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	Metals	Silver	2	U	Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.75	U	Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.69	U	Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.92	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.69	U	Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.89	U	Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	Metals	Silver	1.85	U	Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.67	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.96	U	Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.85	U	N
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	Metals	Silver	1.69	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	Metals	Silver	1.96	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	Metals	Silver	1.85	U	N
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	Metals	Silver	1.85	U	Y
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.67	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	Metals	Silver	1.96	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	Metals	Silver	1.67	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,1,1,2-Tetrachloroethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,1,1,2-Tetrachloroethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,1,1,2-Tetrachloroethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,1,1-Trichloroethane	0.267	U	N

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,1,1-Trichloroethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,1,1-Trichloroethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,1,2,2-Tetrachloroethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,1,2,2-Tetrachloroethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,1,2,2-Tetrachloroethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,1,2-Trichloroethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,1,2-Trichloroethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,1,2-Trichloroethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,1-Dichloroethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,1-Dichloroethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,1-Dichloroethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,1-Dichloroethene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,1-Dichloroethene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,1-Dichloroethene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,1-Dichloropropene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,1-Dichloropropene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,1-Dichloropropene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2,3-Trichlorobenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2,3-Trichlorobenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2,3-Trichlorobenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2,3-Trichloropropane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2,3-Trichloropropane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2,3-Trichloropropane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2,4-Trichlorobenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2,4-Trichlorobenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2,4-Trichlorobenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2,4-Trimethylbenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2,4-Trimethylbenzene	0.26	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2,4-Trimethylbenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2-Dibromo-3-Chloropropane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2-Dibromo-3-Chloropropane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2-Dibromo-3-Chloropropane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2-Dibromoethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2-Dibromoethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2-Dibromoethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2-Dichlorobenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2-Dichlorobenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2-Dichlorobenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2-Dichloroethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2-Dichloroethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2-Dichloroethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,2-Dichloropropane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,2-Dichloropropane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,2-Dichloropropane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,3,5-Trimethylbenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,3,5-Trimethylbenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,3,5-Trimethylbenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,3-Butadiene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,3-Butadiene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,3-Butadiene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,3-Dichlorobenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,3-Dichlorobenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,3-Dichlorobenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,3-Dichloropropane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,3-Dichloropropane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,3-Dichloropropane	0.275	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	1,4-Dichlorobenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	1,4-Dichlorobenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	1,4-Dichlorobenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	2,2-Dichloropropane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	2,2-Dichloropropane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	2,2-Dichloropropane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	2-Butanone	1.07	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	2-Butanone	1.04	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	2-Butanone	1.1	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	2-Chlorotoluene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	2-Chlorotoluene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	2-Chlorotoluene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	2-Hexanone	2.67	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	2-Hexanone	2.6	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	2-Hexanone	2.75	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	4-Chlorotoluene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	4-Chlorotoluene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	4-Chlorotoluene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	4-Ethyltoluene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	4-Ethyltoluene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	4-Ethyltoluene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	4-Methyl-2-Pentanone	2.67	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	4-Methyl-2-Pentanone	2.6	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	4-Methyl-2-Pentanone	2.75	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Acetone	5.34	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Acetone	5.2	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Acetone	5.49	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Benzene	0.0534	U	N

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Benzene	0.052	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Benzene	0.0549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Bromobenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Bromobenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Bromobenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Bromochloromethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Bromochloromethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Bromochloromethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Bromodichloromethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Bromodichloromethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Bromodichloromethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Bromoform	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Bromoform	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Bromoform	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Bromomethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Bromomethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Bromomethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Carbon Disulfide	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Carbon Disulfide	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Carbon Disulfide	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Carbon Tetrachloride	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Carbon Tetrachloride	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Carbon Tetrachloride	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Chlorobenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Chlorobenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Chlorobenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Chloroethane	0.534	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Chloroethane	0.52	U	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Chloroethane	0.549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Chloroform	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Chloroform	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Chloroform	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Chloromethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Chloromethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Chloromethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	cis-1,2-Dichloroethene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	cis-1,2-Dichloroethene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	cis-1,2-Dichloroethene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	cis-1,3-Dichloropropene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	cis-1,3-Dichloropropene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	cis-1,3-Dichloropropene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Cyclohexane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Cyclohexane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Cyclohexane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Dibromochloromethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Dibromochloromethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Dibromochloromethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Dibromomethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Dibromomethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Dibromomethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Dichlorodifluoromethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Dichlorodifluoromethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Dichlorodifluoromethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Dicyclopentadiene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Dicyclopentadiene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Dicyclopentadiene	0.275	U	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Ethylbenzene	0.0534	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Ethylbenzene	0.052	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Ethylbenzene	0.0549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Hexachlorobutadiene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Hexachlorobutadiene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Hexachlorobutadiene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Iodomethane (Methyl Iodide)	1.07	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Iodomethane (Methyl Iodide)	1.04	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Iodomethane (Methyl Iodide)	1.1	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Isopropylbenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Isopropylbenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Isopropylbenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	m,p-Xylenes	0.107	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	m,p-Xylenes	0.104	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	m,p-Xylenes	0.11	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Methylcyclohexane	0.534	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Methylcyclohexane	0.52	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Methylcyclohexane	0.549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Methylene Chloride	1.07	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Methylene Chloride	1.04	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Methylene Chloride	1.1	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	MTBE	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	MTBE	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	MTBE	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Naphthalene	0.534	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Naphthalene	0.52	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Naphthalene	0.549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	n-Butylbenzene	0.267	U	N

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	n-Butylbenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	n-Butylbenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	n-Hexane	0.534	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	n-Hexane	0.52	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	n-Hexane	0.549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	n-Propylbenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	n-Propylbenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	n-Propylbenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	o-Xylene	0.0534	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	o-Xylene	0.052	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	o-Xylene	0.0549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	p-Cymene (p-Isopropyltoluene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	p-Cymene (p-Isopropyltoluene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	p-Cymene (p-Isopropyltoluene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Propene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Propene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Propene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Sec-Butylbenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Sec-Butylbenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Sec-Butylbenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Styrene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Styrene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Styrene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	tert-Butylbenzene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	tert-Butylbenzene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	tert-Butylbenzene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Tetrachloroethylene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Tetrachloroethylene	0.26	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Tetrachloroethylene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Toluene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Toluene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Toluene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Total Xylenes	0.0534	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Total Xylenes	0.052	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Total Xylenes	0.0549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	trans-1,2-dichloroethene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	trans-1,2-dichloroethene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	trans-1,2-dichloroethene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	trans-1,3-dichloropropene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	trans-1,3-dichloropropene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	trans-1,3-dichloropropene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Trichloroethene	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Trichloroethene	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Trichloroethene	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Trichlorofluoromethane	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Trichlorofluoromethane	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Trichlorofluoromethane	0.275	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Vinyl Acetate	0.0534	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Vinyl Acetate	0.052	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Vinyl Acetate	0.0549	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	VOCs	Vinyl Chloride	0.267	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	VOCs	Vinyl Chloride	0.26	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	VOCs	Vinyl Chloride	0.275	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00167	U	Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.0167	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Acenaphthene	0.0333	U	Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Acenaphthene	0.00187		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00366		N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Acenaphthene	0.00607		Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00265		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00166	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	N
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00166	U	Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00167	U	Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00303		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00167	U	Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.0333	U	Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.0167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Acenaphthene	0.00167	U	Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.0167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00198	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Acenaphthene	0.00167	U	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Acenaphthene	0.00167	U	N

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.0106		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.0104		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.0552		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Acenaphthylene	0.398		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Acenaphthylene	0.0199		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.0655		N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Acenaphthylene	0.106		Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.0343		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.0475		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.0137		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.0368	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Acenaphthylene	0.0175	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.0241		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00837		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.00175		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.0549		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.0243		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.00167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.538		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.0541		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Acenaphthylene	0.00934		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.00167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.196		Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.0382	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Acenaphthylene	0.0103	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Acenaphthylene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00256		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.00327		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.0225		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Anthracene	0.177		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Anthracene	0.00743		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.0267	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Anthracene	0.0495	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.0189		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00412		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.00306		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.0245	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Anthracene	0.013	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.0168		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00471		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.00167	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.0236		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.0151		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.00167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.347		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.0325		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Anthracene	0.006		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.00167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.149		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.018	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Anthracene	0.00347	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Anthracene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Anthracene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Anthracene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Anthracene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Anthracene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Anthracene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Anthracene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Anthracene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Anthracene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0082		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.00982		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.091		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.693		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(a)anthracene	0.0318		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.055	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.124	J	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.0355		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0104		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.00723		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0722	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0406	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.0505		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0191		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.00405		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0643		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.055		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.00227		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	1.52		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.156		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(a)anthracene	0.0293		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.386		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.0411	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.00975	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)anthracene	0.00258		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0126		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.0154		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.148		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Benzo(a)pyrene	1.38		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(a)pyrene	0.0675		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0817	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.184	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.0488		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0123		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.0107		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.13	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0676	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.0851		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0318		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.00705		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0937		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.0947		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.00367		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	2.73		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.301		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(a)pyrene	0.0544		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.00292		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.877		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.0818	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.0232	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)pyrene	0.00369		Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)pyrene	0.00268		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.0192		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.0205		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.172		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	1.49		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(b)fluoranthene	0.0709		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.0832	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.196	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.0504		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.0181		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.0146		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.136	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.0674	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.1		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.033		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.00759		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.11		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.104		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.00577		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	3.04		Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.327		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(b)fluoranthene	0.0596		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.00319		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.858		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.0813	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.0237	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(b)fluoranthene	0.00466		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(b)fluoranthene	0.00353		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.0129		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.0141		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.175		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	1.68		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(g,h,i)perylene	0.0806		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.0836	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.173	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.0455		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.0135		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.0184		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.113	J	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.056	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.0731		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.0285		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.00731		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.0719		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.0802		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.00299		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	2.6		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.295		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(g,h,i)perylene	0.0453		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.00461		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.746		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.104	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.0322	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(g,h,i)perylene	0.00446		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(g,h,i)perylene	0.00376		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00639		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.00677		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0507		Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.453		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(k)fluoranthene	0.0187		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0268	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0654	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.0149		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0048		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.00468		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0417		Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0269		N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.0245		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0109		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.00238		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0322		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.0357		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.698		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.0947		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Benzo(k)fluoranthene	0.0209		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.247		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.0239	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.00611	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	N

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.012		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.0134		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.111		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Chrysene	0.899		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Chrysene	0.0416		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.0607	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Chrysene	0.161	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.038		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.0101		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.00799		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.0877	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Chrysene	0.046	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.0589		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.022		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.00454		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.0725		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.0666		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.00286		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	1.89		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.193		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Chrysene	0.0357		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.00176		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.521		Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.0506	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Chrysene	0.0131	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Chrysene	0.00303		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Chrysene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Chrysene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Chrysene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Chrysene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Chrysene	0.00216		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Chrysene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Chrysene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Chrysene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.165		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00962	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.025	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.0333	U	Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.0167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.0273		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.0343		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.338		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Fluoranthene	2.68		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Fluoranthene	0.119		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.206	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Fluoranthene	0.491	J	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.128		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.026		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.019		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.221	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Fluoranthene	0.127	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.157		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.0671		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.013		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.213		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.178		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.00609		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	4.96		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.512		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Fluoranthene	0.0957		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.00495		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	1.72		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.181	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Fluoranthene	0.0471	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Fluoranthene	0.00704		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Fluoranthene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Fluoranthene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Fluoranthene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Fluoranthene	0.00517		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Fluoranthene	0.00166	U	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00231		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.0167	U	Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Fluorene	0.0597		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Fluorene	0.00213		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.0284	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Fluorene	0.0474	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.019		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00166	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00932	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Fluorene	0.00482	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00625		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00211		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00167	U	Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.0247		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00782		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.141		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.0167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Fluorene	0.00235		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.0535		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00825	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Fluorene	0.00167	UJ	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Fluorene	0.00167	U	Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Fluorene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Fluorene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Fluorene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Fluorene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Fluorene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Fluorene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Fluorene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Fluorene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0105		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0114		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.123		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	1.16		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0541		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0589	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.131	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0329		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0074		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00855		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0802	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0401	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0509		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0209		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00508		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0547		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0594		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00233		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	1.88		Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.213		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0342		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00285		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.538		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0649	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0202	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00309		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00252		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0167	U	Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.167	U	Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Naphthalene	0.333	U	Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Naphthalene	0.0167	U	Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.116		N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Naphthalene	0.168		Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0518		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0166	U	Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0279	J	Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Naphthalene	0.0167	UJ	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0188		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0167	U	Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0167	U	Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0167	U	Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0167	U	Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.514		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.167	U	Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Naphthalene	0.0167	U	Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0167	U	Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.257		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0215	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Naphthalene	0.0167	UJ	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Naphthalene	0.0167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Naphthalene	0.0166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Naphthalene	0.0167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Naphthalene	0.0166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Naphthalene	0.0167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Naphthalene	0.0167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Naphthalene	0.0167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Naphthalene	0.0166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Naphthalene	0.0167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.0217		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.0288		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.285		Y

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Phenanthrene	1.73		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Phenanthrene	0.0593		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.246	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Phenanthrene	0.529	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.159		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.016		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.0114		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.152	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Phenanthrene	0.0837	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.113		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.0485		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.00783		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.253		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.131		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.00245		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	3.12		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.267		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Phenanthrene	0.0523		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.00316		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	1.3		Y
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.145	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Phenanthrene	0.0327	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Phenanthrene	0.00568		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Phenanthrene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Phenanthrene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Phenanthrene	0.00167	U	N

Attachment 3
Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Phenanthrene	0.00348		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Phenanthrene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B11	Onsite	N	30-Oct-19	D-B11-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.0284		Y
B11	Onsite	N	30-Oct-19	D-B11-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.0378		Y
B12	Onsite	N	31-Oct-19	D-B12-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.4		Y
B12	Onsite	N	31-Oct-19	D-B12-19.5-20	19.5-20.0	>15	PAHs	Pyrene	3.18		Y
B12	Onsite	N	31-Oct-19	D-B12-24.5-25.0	24.5-25.0	>15	PAHs	Pyrene	0.15		Y
B13	Onsite	N	31-Oct-19	D-B13-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.243	J	N
B13	Onsite	FD	31-Oct-19	D-FD01-103119	15.0-15.5	>15	PAHs	Pyrene	0.524	J	Y
B13	Onsite	N	31-Oct-19	D-B13-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.152		Y
B14	Onsite	N	29-Oct-19	D-B14-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.0237		Y
B14	Onsite	N	29-Oct-19	D-B14-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.0218		Y
B16	Onsite	N	29-Oct-19	D-B16-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.281	J	Y
B16	Onsite	FD	29-Oct-19	D-FD02-102919	15.0-15.5	>15	PAHs	Pyrene	0.155	J	N
B16	Onsite	N	29-Oct-19	D-B16-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.191		Y
B17	Onsite	N	30-Oct-19	D-B17-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.0815		Y
B17	Onsite	N	30-Oct-19	D-B17-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.0161		Y
B19	Onsite	N	02-Nov-19	D-B19-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.257		Y
B19	Onsite	N	02-Nov-19	D-B19-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.225		Y
B20	Onsite	N	02-Nov-19	D-B20-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.00665		Y
B21	Onsite	N	01-Nov-19	D-B21-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	6.63		Y
B21	Onsite	N	01-Nov-19	D-B21-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.703		Y
B21	Onsite	N	01-Nov-19	D-B21-24.5-25.0	24.5-25.0	>15	PAHs	Pyrene	0.128		Y
B23	Onsite	N	31-Oct-19	D-B23-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.00624		Y
B24	Onsite	N	30-Oct-19	D-B24-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	2.08		Y

Attachment 3

Data Used in HHRA for Deep Soil (greater than 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B24	Onsite	N	30-Oct-19	D-B24-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.215	J	Y
B24	Onsite	FD	30-Oct-19	D-FD01-103019	19.5-20.0	>15	PAHs	Pyrene	0.0615	J	N
B25	Onsite	N	31-Oct-19	D-B25-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-20.0-20.5	20.0-20.5	>15	PAHs	Pyrene	0.00828		Y
B25	Onsite	N	31-Oct-19	D-B25-25.0-25.5	25.0-25.5	>15	PAHs	Pyrene	0.00166	U	Y
B25	Onsite	N	31-Oct-19	D-B25-30.0-30.5	30.0-30.5	>15	PAHs	Pyrene	0.00167	U	Y
B25	Onsite	N	31-Oct-19	D-B25-40.0-40.5	40.0-40.5	>15	PAHs	Pyrene	0.00166	U	Y
B25	Onsite	FD	31-Oct-19	D-FD04-103119	40.0-40.5	>15	PAHs	Pyrene	0.00167	U	N
B26	Onsite	N	02-Nov-19	D-B26-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-20.0-20.5	20.0-20.5	>15	PAHs	Pyrene	0.00657		Y
B26	Onsite	N	02-Nov-19	D-B26-25.0-25.5	25.0-25.5	>15	PAHs	Pyrene	0.00167	U	Y
B26	Onsite	N	02-Nov-19	D-B26-30.0-30.5	30.0-30.5	>15	PAHs	Pyrene	0.00166	U	Y
B26	Onsite	N	02-Nov-19	D-B26-40.0-40.5	40.0-40.5	>15	PAHs	Pyrene	0.00167	U	Y

Notes:

CAS = chemical abstract service

FD = field duplicate

J = estimated

mg/kg = milligram per kilogram

N= normal

PAH = polycyclic aromatic hydrocarbons

U = nondetect

VOC = volatile organic compound

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	18.3		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	25		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	20.6		Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	Metals	Arsenic	15.2		Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	Metals	Arsenic	12.1		N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	Metals	Arsenic	13.1		Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	Metals	Arsenic	12.1		Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	14.2		Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	15.1		Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	20.4		Y
B29	Offsite	N	07-Nov-19	D-B29-20.0-20.5	20.0-20.5	>15	Metals	Arsenic	22.5		Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	15.4		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	Metals	Arsenic	16		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	18.4		Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	Metals	Arsenic	12.6		Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	10.3		Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	Metals	Arsenic	9.75		Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	32.6		Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	Metals	Arsenic	10		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	8.59		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	Metals	Arsenic	9.21		Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	Metals	Arsenic	13.8		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	Metals	Arsenic	14.2		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	Metals	Barium	98.3		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	Metals	Barium	212		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	Metals	Barium	149		Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	Metals	Barium	202		Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	Metals	Barium	41.6		N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	Metals	Barium	42.7		Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	Metals	Barium	18.9		Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	Metals	Barium	82.8	J	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	Metals	Barium	129		Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	Metals	Barium	413		Y
B29	Offsite	N	07-Nov-19	D-B29-20.0-20.5	20.0-20.5	>15	Metals	Barium	275		Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	Metals	Barium	130		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	Metals	Barium	142		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	Metals	Barium	114		Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	Metals	Barium	767		Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	Metals	Barium	241		Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	Metals	Barium	236		Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	Metals	Barium	201		Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	Metals	Barium	212		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	Metals	Barium	84.2		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	Metals	Barium	99.1		Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	Metals	Barium	170		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	Metals	Barium	34.7		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.79	U	Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.85	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.92	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	Metals	Cadmium	1.92	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	Metals	Cadmium	1.72	U	Y
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	Metals	Cadmium	1.89	U	N
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	Metals	Cadmium	1.85	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.67	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.75	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.96	U	Y
B29	Offsite	N	07-Nov-19	D-B29-20.0-20.5	20.0-20.5	>15	Metals	Cadmium	1.75	U	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.69	U	Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	Metals	Cadmium	1.82	U	Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.85	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	Metals	Cadmium	1.75	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.67	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	Metals	Cadmium	1.72	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.89	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	Metals	Cadmium	1.75	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.82	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	Metals	Cadmium	1.67	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	Metals	Cadmium	1.85	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	Metals	Cadmium	1.85	U	Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	Metals	Chromium	12.3		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	Metals	Chromium	63		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	Metals	Chromium	14		Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	Metals	Chromium	5.12		Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	Metals	Chromium	6.93		N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	Metals	Chromium	7.93		Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	Metals	Chromium	5.26		Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	Metals	Chromium	12		Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	Metals	Chromium	20.7		Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	Metals	Chromium	15		Y
B29	Offsite	N	07-Nov-19	D-B29-20.0-20.5	20.0-20.5	>15	Metals	Chromium	12.4		Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	Metals	Chromium	14		Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	Metals	Chromium	21.8		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	Metals	Chromium	13.4		Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	Metals	Chromium	10.6		Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	Metals	Chromium	10.5		Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	Metals	Chromium	14		Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	Metals	Chromium	16.7		Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	Metals	Chromium	9.87		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	Metals	Chromium	6.19		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	Metals	Chromium	11.8		Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	Metals	Chromium	12.8		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	Metals	Chromium	12.7		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	Metals	Lead	23		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	Metals	Lead	21.6		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	Metals	Lead	13		Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	Metals	Lead	17		Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	Metals	Lead	12.2		Y
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	Metals	Lead	11.9		N
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	Metals	Lead	8.24		Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	Metals	Lead	11.2		Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	Metals	Lead	17.7		Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	Metals	Lead	20.3		Y
B29	Offsite	N	07-Nov-19	D-B29-20.0-20.5	20.0-20.5	>15	Metals	Lead	14.1		Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	Metals	Lead	14.1		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	Metals	Lead	15.9		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	Metals	Lead	6.87		Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	Metals	Lead	7.26		Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	Metals	Lead	3.86		Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	Metals	Lead	5.19		Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	Metals	Lead	9.69		Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	Metals	Lead	9.34		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	Metals	Lead	10.1		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	Metals	Lead	10.8		Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	Metals	Lead	13.8		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	Metals	Lead	12.6		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0382		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0192	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0189	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	Metals	Mercury	0.0172	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	Metals	Mercury	0.0172	UJ	Y
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	Metals	Mercury	0.0179	UJ	N
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	Metals	Mercury	0.0172	UJ	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0169	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.02	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.02	U	Y
B29	Offsite	N	07-Nov-19	D-B29-20.0-20.5	20.0-20.5	>15	Metals	Mercury	0.0189	U	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0192	U	Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	Metals	Mercury	0.0189	U	Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0169	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	Metals	Mercury	0.0182	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0169	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	Metals	Mercury	0.0192	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	Metals	Mercury	0.0172	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0315		Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	Metals	Mercury	0.0196	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	Metals	Mercury	0.0172	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	Metals	Mercury	0.0261		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.79	U	Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.85	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.92	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	Metals	Selenium	1.92	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	Metals	Selenium	1.72	U	Y
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	Metals	Selenium	1.89	U	N
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	Metals	Selenium	1.85	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.67	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.75	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.96	U	Y
B29	Offsite	N	07-Nov-19	D-B29-20.0-20.5	20.0-20.5	>15	Metals	Selenium	1.75	U	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.69	U	Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	Metals	Selenium	1.82	U	Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.85	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	Metals	Selenium	1.75	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.67	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	Metals	Selenium	1.72	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.89	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	Metals	Selenium	1.75	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.82	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	Metals	Selenium	1.67	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	Metals	Selenium	1.85	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	Metals	Selenium	1.85	U	Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.79	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.85	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.92	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	Metals	Silver	1.92	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	Metals	Silver	1.72	U	Y
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	Metals	Silver	1.89	U	N
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	Metals	Silver	1.85	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.67	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.75	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.96	U	Y
B29	Offsite	N	07-Nov-19	D-B29-20.0-20.5	20.0-20.5	>15	Metals	Silver	1.75	U	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.69	U	Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	Metals	Silver	1.82	U	Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.85	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	Metals	Silver	1.75	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.67	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	Metals	Silver	1.72	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.89	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	Metals	Silver	1.75	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.82	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	Metals	Silver	1.67	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	Metals	Silver	1.85	UJ	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	Metals	Silver	1.85	U	Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Acenaphthene	0.00167	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Acenaphthene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Acenaphthene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Acenaphthene	0.00167	U	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00166	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthene	0.00167	U	Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00422		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00408		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Acenaphthylene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Acenaphthylene	0.00167	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Acenaphthylene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.00283		Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00628	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Acenaphthylene	0.00219	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00576		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Acenaphthylene	0.00663		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00166	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Acenaphthylene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Acenaphthylene	0.0127		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00382		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Anthracene	0.00167	U	Y
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Anthracene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Anthracene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Anthracene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Anthracene	0.00167	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00384	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Anthracene	0.00183	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00379		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Anthracene	0.00556		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Anthracene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Anthracene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Anthracene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00166	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Anthracene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Anthracene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Anthracene	0.00962		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0139		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00361		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0376	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.012	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.0168		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)anthracene	0.0246		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)anthracene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)anthracene	0.00178		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00634		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)anthracene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)anthracene	0.00266		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)anthracene	0.044		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0247		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00418		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Benzo(a)pyrene	0.00198		Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0772	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.022	J	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.029		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(a)pyrene	0.0424		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)pyrene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)pyrene	0.00274		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.0109		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)pyrene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(a)pyrene	0.00431		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(a)pyrene	0.0882		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.0324		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00699		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Benzo(b)fluoranthene	0.00204		Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00201		Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.0766	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.0257	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.0372		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(b)fluoranthene	0.0558		Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00241		Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(b)fluoranthene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00198		Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(b)fluoranthene	0.00552		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.0142		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(b)fluoranthene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(b)fluoranthene	0.00604		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(b)fluoranthene	0.117		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.0211		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00283		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Benzo(g,h,i)perylene	0.00264		Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.0918	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.0165	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.0292		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(g,h,i)perylene	0.0394		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(g,h,i)perylene	0.00166	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(g,h,i)perylene	0.00211		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00731		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(g,h,i)perylene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(g,h,i)perylene	0.00598		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(g,h,i)perylene	0.076		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0106		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00222		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0253	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.00794	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.0109		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Benzo(k)fluoranthene	0.0135		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(k)fluoranthene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(k)fluoranthene	0.00176		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00443		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(k)fluoranthene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Benzo(k)fluoranthene	0.00187		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Benzo(k)fluoranthene	0.0313		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.0188		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00456		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Chrysene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Chrysene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Chrysene	0.00167	U	Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Chrysene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Chrysene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Chrysene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.046	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Chrysene	0.0143	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.0218		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Chrysene	0.0327		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Chrysene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Chrysene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Chrysene	0.00425		Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00809		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Chrysene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Chrysene	0.00352		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Chrysene	0.0629		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00166	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Dibenz(a,h)Anthracene	0.00167	U	Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.0418		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.0104		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Fluoranthene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Fluoranthene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Fluoranthene	0.00218		Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Fluoranthene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.00233		Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.087	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Fluoranthene	0.028	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.0526		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Fluoranthene	0.0748		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.00282		Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Fluoranthene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.00217		Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Fluoranthene	0.006		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.0158		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Fluoranthene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Fluoranthene	0.00772		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Fluoranthene	0.124		Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Fluorene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Fluorene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Fluorene	0.00167	U	Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Fluorene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Fluorene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Fluorene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00167	U	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Fluorene	0.00167	U	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Fluorene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Fluorene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Fluorene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Fluorene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00166	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Fluorene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Fluorene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Fluorene	0.00167	U	Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0163		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00238		Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00178		Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.062	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0128	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0217		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0297		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00175		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00593		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.00395		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Indeno(1,2,3-c,d)Pyrene	0.0579		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Naphthalene	0.0166	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Naphthalene	0.0167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Naphthalene	0.0167	U	Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Naphthalene	0.0167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Naphthalene	0.0167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Naphthalene	0.0167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0167	U	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Naphthalene	0.0167	U	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Naphthalene	0.0167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Naphthalene	0.0166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Naphthalene	0.0167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Naphthalene	0.0167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0166	U	Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Naphthalene	0.0167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Naphthalene	0.0167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Naphthalene	0.0167	U	Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.0221		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00921		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Phenanthrene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Phenanthrene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Phenanthrene	0.00167	U	Y

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Phenanthrene	0.00167	U	N
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00166	U	Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.025	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Phenanthrene	0.00921	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.025		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Phenanthrene	0.0379		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Phenanthrene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00647		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Phenanthrene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Phenanthrene	0.00383		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Phenanthrene	0.049		Y
B18	Offsite	N	05-Nov-19	D-B18-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.0508		Y
B22	Offsite	N	29-Oct-19	D-B22-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.0109		Y
B27	Offsite	N	03-Nov-19	D-B27-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.00167	U	Y
B27	Offsite	N	03-Nov-19	D-B27-20.0-20.5	20.0-20.5	>15	PAHs	Pyrene	0.00166	U	Y
B27	Offsite	N	03-Nov-19	D-B27-25.0-25.5	25.0-25.5	>15	PAHs	Pyrene	0.00167	U	N
B27	Offsite	FD	03-Nov-19	D-FD02-110319	25.0-25.5	>15	PAHs	Pyrene	0.0025		Y
B27	Offsite	N	04-Nov-19	D-B27-30.0-30.5	30.0-30.5	>15	PAHs	Pyrene	0.00167	U	Y
B27	Offsite	FD	02-Nov-19	D-FD01-110219	30.0-30.5	>15	PAHs	Pyrene	0.00167	U	N

Attachment 4

Data Used in HHRA for Deep Soil (greater than 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Area	Sample Type	Sample Date	Sample ID	Depth (Feet)	Depth Group (Feet)	Chemical Group	Unique Analyte name	Result (mg/kg)	Flag	Best Result
B27	Offsite	N	04-Nov-19	D-B27-40.0-40.5	40.0-40.5	>15	PAHs	Pyrene	0.00167	U	Y
B28	Offsite	N	29-Oct-19	D-B28-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.00257		Y
B28	Offsite	N	29-Oct-19	D-B28-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.00166	U	Y
B29	Offsite	N	07-Nov-19	D-B29-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.138	J	Y
B30	Offsite	N	07-Nov-19	D-B29-20.0-20.5	19.5-20.0	>15	PAHs	Pyrene	0.0409	J	Y
B30	Offsite	N	01-Nov-19	D-B30-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.0605		Y
B30	Offsite	N	01-Nov-19	D-B30-19.5-20.0	19.5-20.0	>15	PAHs	Pyrene	0.0845		Y
B31	Offsite	N	06-Nov-19	D-B31-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.00314		Y
B31	Offsite	N	06-Nov-19	D-B31-20.0-20.5	20.0-20.5	>15	PAHs	Pyrene	0.00166	U	Y
B32	Offsite	N	06-Nov-19	D-B32-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.00167	U	Y
B32	Offsite	N	06-Nov-19	D-B32-20.0-20.5	20.0-20.5	>15	PAHs	Pyrene	0.00167	U	Y
B33	Offsite	N	06-Nov-19	D-B33-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.00226		Y
B33	Offsite	N	06-Nov-19	D-B33-20.0-20.5	20.0-20.5	>15	PAHs	Pyrene	0.0075		Y
B34	Offsite	N	06-Nov-19	D-B34-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.0196		Y
B34	Offsite	N	06-Nov-19	D-B34-20.0-20.5	20.0-20.5	>15	PAHs	Pyrene	0.00167	U	Y
B35	Offsite	N	05-Nov-19	D-B35-15.0-15.5	15.0-15.5	>15	PAHs	Pyrene	0.00917		Y
B35	Offsite	N	05-Nov-19	D-B35-20.0-20.5	20.0-20.5	>15	PAHs	Pyrene	0.155		Y

Notes:

CAS = chemical abstract service

FD = field duplicate

J = estimated

mg/kg = milligram per kilogram

N= normal

PAH = polycyclic aromatic hydrocarbons

U = nondetect

VOC = volatile organic compound

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	630-20-6	1,1,1,2-Tetrachloroethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	71-55-6	1,1,1-Trichloroethane	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	79-34-5	1,1,2,2-Tetrachloroethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	79-00-5	1,1,2-Trichloroethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-34-3	1,1-Dichloroethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-35-4	1,1-Dichloroethene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	563-58-6	1,1-Dichloropropene	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	87-61-6	1,2,3-Trichlorobenzene	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	96-18-4	1,2,3-Trichloropropane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	120-82-1	1,2,4-Trichlorobenzene	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	95-63-6	1,2,4-Trimethylbenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	96-12-8	1,2-Dibromo-3-Chloropropane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	106-93-4	1,2-Dibromoethane	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	95-50-1	1,2-Dichlorobenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	107-06-2	1,2-Dichloroethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	78-87-5	1,2-Dichloropropane	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	108-67-8	1,3,5-Trimethylbenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	106-99-0	1,3-Butadiene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	541-73-1	1,3-Dichlorobenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	142-28-9	1,3-Dichloropropane	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	106-46-7	1,4-Dichlorobenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	544-10-5	1-Chlorohexane	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	594-20-7	2,2-Dichloropropane	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	95-49-8	2-Chlorotoluene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	591-78-6	2-Hexanone	0.05	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	106-43-4	4-Chlorotoluene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	108-10-1	4-Methyl-2-Pentanone	0.05	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	67-64-1	Acetone	0.1	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	71-43-2	Benzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	108-86-1	Bromobenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	74-97-5	Bromochloromethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-27-4	Bromodichloromethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-25-2	Bromoform	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-15-0	Carbon Disulfide	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	56-23-5	Carbon Tetrachloride	0.005	U	Y

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	108-90-7	Chlorobenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-00-3	Chloroethane	0.01	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	67-66-3	Chloroform	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	156-59-2	cis-1,2-Dichloroethylene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	10061-01-5	cis-1,3-Dichloropropene	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	110-82-7	Cyclohexane	0.005	UJ	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	124-48-1	Dibromochloromethane	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-71-8	Dichlorodifluoromethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	77-73-6	Dicyclopentadiene	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	100-41-4	Ethylbenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	87-68-3	Hexachlorobutadiene	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	98-82-8	Isopropylbenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	108-38-3	m,p-Xylenes	0.01	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	74-83-9	Methyl bromide	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	74-87-3	Methyl Chloride	0.01	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	78-93-3	Methyl ethyl ketone	0.05	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	74-88-4	Methyl iodide	0.02	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	108-87-2	Methylcyclohexane	0.01	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	74-95-3	Methylene Bromide	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-09-2	Methylene Chloride	0.01	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	1634-04-4	MTBE	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	91-20-3	Naphthalene	0.01	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	104-51-8	n-Butylbenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	110-54-3	n-Hexane	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	103-65-1	n-Propylbenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	95-47-6	o-Xylene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	99-87-6	p-Cymene (p-Isopropyltoluene)	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	135-98-8	Sec-Butylbenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	100-42-5	Styrene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	98-06-6	tert-Butylbenzene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	127-18-4	Tetrachloroethene	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	108-88-3	Toluene	0.00591		Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	NA	Total Trihalomethanes	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	1330-20-7	Total Xylenes	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	156-60-5	trans-1,2-dichloroethylene	0.001	U	Y

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	10061-02-6	trans-1,3-dichloropropene	0.005	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	79-01-6	Trichloroethylene	0.0129		Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-69-4	Trichlorofluoromethane	0.001	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	108-05-4	Vinyl Acetate	0.05	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		VOC	75-01-4	Vinyl Chloride	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	630-20-6	1,1,1,2-Tetrachloroethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	71-55-6	1,1,1-Trichloroethane	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	79-34-5	1,1,2,2-Tetrachloroethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	79-00-5	1,1,2-Trichloroethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-34-3	1,1-Dichloroethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-35-4	1,1-Dichloroethene	0.00402		Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	563-58-6	1,1-Dichloropropene	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	87-61-6	1,2,3-Trichlorobenzene	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	96-18-4	1,2,3-Trichloropropane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	120-82-1	1,2,4-Trichlorobenzene	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	95-63-6	1,2,4-Trimethylbenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	96-12-8	1,2-Dibromo-3-Chloropropane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	106-93-4	1,2-Dibromoethane	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	95-50-1	1,2-Dichlorobenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	107-06-2	1,2-Dichloroethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	78-87-5	1,2-Dichloropropane	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	108-67-8	1,3,5-Trimethylbenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	106-99-0	1,3-Butadiene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	541-73-1	1,3-Dichlorobenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	142-28-9	1,3-Dichloropropane	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	106-46-7	1,4-Dichlorobenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	544-10-5	1-Chlorohexane	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	594-20-7	2,2-Dichloropropane	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	95-49-8	2-Chlorotoluene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	591-78-6	2-Hexanone	0.05	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	106-43-4	4-Chlorotoluene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	108-10-1	4-Methyl-2-Pentanone	0.05	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	67-64-1	Acetone	0.1	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	71-43-2	Benzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	108-86-1	Bromobenzene	0.001	U	Y

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	74-97-5	Bromochloromethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-27-4	Bromodichloromethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-25-2	Bromoform	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-15-0	Carbon Disulfide	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	56-23-5	Carbon Tetrachloride	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	108-90-7	Chlorobenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-00-3	Chloroethane	0.01	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	67-66-3	Chloroform	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	156-59-2	cis-1,2-Dichloroethylene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	10061-01-5	cis-1,3-Dichloropropene	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	110-82-7	Cyclohexane	0.005	UJ	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	124-48-1	Dibromochloromethane	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-71-8	Dichlorodifluoromethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	77-73-6	Dicyclopentadiene	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	100-41-4	Ethylbenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	87-68-3	Hexachlorobutadiene	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	98-82-8	Isopropylbenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	108-38-3	m,p-Xylenes	0.01	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	74-83-9	Methyl bromide	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	74-87-3	Methyl Chloride	0.01	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	78-93-3	Methyl ethyl ketone	0.05	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	74-88-4	Methyl iodide	0.02	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	108-87-2	Methylcyclohexane	0.01	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	74-95-3	Methylene Bromide	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-09-2	Methylene Chloride	0.01	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	1634-04-4	MTBE	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	91-20-3	Naphthalene	0.01	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	104-51-8	n-Butylbenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	110-54-3	n-Hexane	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	103-65-1	n-Propylbenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	95-47-6	o-Xylene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	99-87-6	p-Cymene (p-Isopropyltoluene)	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	135-98-8	Sec-Butylbenzene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	100-42-5	Styrene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	98-06-6	tert-Butylbenzene	0.001	U	Y

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	127-18-4	Tetrachloroethene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	108-88-3	Toluene	0.00224		Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	NA	Total Trihalomethanes	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	1330-20-7	Total Xylenes	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	156-60-5	trans-1,2-dichloroethylene	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	10061-02-6	trans-1,3-dichloropropene	0.005	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	79-01-6	Trichloroethylene	0.078		Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-69-4	Trichlorofluoromethane	0.001	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	108-05-4	Vinyl Acetate	0.05	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		VOC	75-01-4	Vinyl Chloride	0.002	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	630-20-6	1,1,1,2-Tetrachloroethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	71-55-6	1,1,1-Trichloroethane	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	79-34-5	1,1,2,2-Tetrachloroethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	79-00-5	1,1,2-Trichloroethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-34-3	1,1-Dichloroethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-35-4	1,1-Dichloroethene	0.00401		N
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	563-58-6	1,1-Dichloropropene	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	87-61-6	1,2,3-Trichlorobenzene	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	96-18-4	1,2,3-Trichloropropane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	120-82-1	1,2,4-Trichlorobenzene	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	95-63-6	1,2,4-Trimethylbenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	96-12-8	1,2-Dibromo-3-Chloropropane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	106-93-4	1,2-Dibromoethane	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	95-50-1	1,2-Dichlorobenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	107-06-2	1,2-Dichloroethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	78-87-5	1,2-Dichloropropane	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	108-67-8	1,3,5-Trimethylbenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	106-99-0	1,3-Butadiene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	541-73-1	1,3-Dichlorobenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	142-28-9	1,3-Dichloropropane	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	106-46-7	1,4-Dichlorobenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	544-10-5	1-Chlorohexane	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	594-20-7	2,2-Dichloropropane	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	95-49-8	2-Chlorotoluene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	591-78-6	2-Hexanone	0.05	U	Y

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	106-43-4	4-Chlorotoluene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	108-10-1	4-Methyl-2-Pentanone	0.05	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	67-64-1	Acetone	0.1	UJ	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	71-43-2	Benzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	108-86-1	Bromobenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	74-97-5	Bromochloromethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-27-4	Bromodichloromethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-25-2	Bromoform	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-15-0	Carbon Disulfide	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	56-23-5	Carbon Tetrachloride	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	108-90-7	Chlorobenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-00-3	Chloroethane	0.01	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	67-66-3	Chloroform	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	156-59-2	cis-1,2-Dichloroethylene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	10061-01-5	cis-1,3-Dichloropropene	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	110-82-7	Cyclohexane	0.005	UJ	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	124-48-1	Dibromochloromethane	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-71-8	Dichlorodifluoromethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	77-73-6	Dicyclopentadiene	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	100-41-4	Ethylbenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	87-68-3	Hexachlorobutadiene	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	98-82-8	Isopropylbenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	108-38-3	m,p-Xylenes	0.01	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	74-83-9	Methyl bromide	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	74-87-3	Methyl Chloride	0.01	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	78-93-3	Methyl ethyl ketone	0.05	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	74-88-4	Methyl iodide	0.02	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	108-87-2	Methylcyclohexane	0.01	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	74-95-3	Methylene Bromide	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-09-2	Methylene Chloride	0.01	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	1634-04-4	MTBE	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	91-20-3	Naphthalene	0.01	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	104-51-8	n-Butylbenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	110-54-3	n-Hexane	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	103-65-1	n-Propylbenzene	0.001	U	Y

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	95-47-6	o-Xylene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	99-87-6	p-Cymene (p-Isopropyltoluene)	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	135-98-8	Sec-Butylbenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	100-42-5	Styrene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	98-06-6	tert-Butylbenzene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	127-18-4	Tetrachloroethene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	108-88-3	Toluene	0.0077		N
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	NA	Total Trihalomethanes	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	1330-20-7	Total Xylenes	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	156-60-5	trans-1,2-dichloroethylene	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	10061-02-6	trans-1,3-dichloropropene	0.005	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	79-01-6	Trichloroethylene	0.0688		N
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-69-4	Trichlorofluoromethane	0.001	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	108-05-4	Vinyl Acetate	0.05	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		VOC	75-01-4	Vinyl Chloride	0.002	U	Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	630-20-6	1,1,1,2-Tetrachloroethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	71-55-6	1,1,1-Trichloroethane	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	79-34-5	1,1,2,2-Tetrachloroethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	79-00-5	1,1,2-Trichloroethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-34-3	1,1-Dichloroethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-35-4	1,1-Dichloroethene	0.00437		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	563-58-6	1,1-Dichloropropene	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	87-61-6	1,2,3-Trichlorobenzene	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	96-18-4	1,2,3-Trichloropropane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	120-82-1	1,2,4-Trichlorobenzene	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	95-63-6	1,2,4-Trimethylbenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	96-12-8	1,2-Dibromo-3-Chloropropane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	106-93-4	1,2-Dibromoethane	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	95-50-1	1,2-Dichlorobenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	107-06-2	1,2-Dichloroethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	78-87-5	1,2-Dichloropropane	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	108-67-8	1,3,5-Trimethylbenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	106-99-0	1,3-Butadiene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	541-73-1	1,3-Dichlorobenzene	0.001	U	N

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	142-28-9	1,3-Dichloropropane	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	106-46-7	1,4-Dichlorobenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	544-10-5	1-Chlorohexane	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	594-20-7	2,2-Dichloropropane	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	95-49-8	2-Chlorotoluene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	591-78-6	2-Hexanone	0.05	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	106-43-4	4-Chlorotoluene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	108-10-1	4-Methyl-2-Pentanone	0.05	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	67-64-1	Acetone	0.1	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	71-43-2	Benzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	108-86-1	Bromobenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	74-97-5	Bromochloromethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-27-4	Bromodichloromethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-25-2	Bromoform	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-15-0	Carbon Disulfide	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	56-23-5	Carbon Tetrachloride	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	108-90-7	Chlorobenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-00-3	Chloroethane	0.01	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	67-66-3	Chloroform	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	156-59-2	cis-1,2-Dichloroethylene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	10061-01-5	cis-1,3-Dichloropropene	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	110-82-7	Cyclohexane	0.005	UJ	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	124-48-1	Dibromochloromethane	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-71-8	Dichlorodifluoromethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	77-73-6	Dicyclopentadiene	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	100-41-4	Ethylbenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	87-68-3	Hexachlorobutadiene	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	98-82-8	Isopropylbenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	108-38-3	m,p-Xylenes	0.01	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	74-83-9	Methyl bromide	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	74-87-3	Methyl Chloride	0.01	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	78-93-3	Methyl ethyl ketone	0.05	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	74-88-4	Methyl iodide	0.02	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	108-87-2	Methylcyclohexane	0.01	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	74-95-3	Methylene Bromide	0.001	U	N

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-09-2	Methylene Chloride	0.01	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	1634-04-4	MTBE	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	91-20-3	Naphthalene	0.01	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	104-51-8	n-Butylbenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	110-54-3	n-Hexane	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	103-65-1	n-Propylbenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	95-47-6	o-Xylene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	99-87-6	p-Cymene (p-Isopropyltoluene)	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	135-98-8	Sec-Butylbenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	100-42-5	Styrene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	98-06-6	tert-Butylbenzene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	127-18-4	Tetrachloroethene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	108-88-3	Toluene	0.00792		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	NA	Total Trihalomethanes	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	1330-20-7	Total Xylenes	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	156-60-5	trans-1,2-dichloroethylene	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	10061-02-6	trans-1,3-dichloropropene	0.005	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	79-01-6	Trichloroethylene	0.0712		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-69-4	Trichlorofluoromethane	0.001	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	108-05-4	Vinyl Acetate	0.05	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		VOC	75-01-4	Vinyl Chloride	0.002	U	N
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-36-0	Antimony	0.002	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-38-2	Arsenic	0.00466		Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-39-3	Barium	0.0435		Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-41-7	Beryllium	0.002	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-43-9	Cadmium	0.002	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-47-3	Chromium	0.004	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-48-4	Cobalt	0.002	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-50-8	Copper	0.004	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7439-92-1	Lead	0.002	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7439-96-5	Manganese	0.0536		Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7439-97-6	Mercury	0.0000263	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7439-98-7	Molybdenum	0.00275		Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-02-0	Nickel	0.002	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7782-49-2	Selenium	0.00498		Y

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-22-4	Silver	0.002	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		Metals	7440-28-0	Thallium	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-36-0	Antimony	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-38-2	Arsenic	0.0068		Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-39-3	Barium	0.0431		Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-41-7	Beryllium	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-43-9	Cadmium	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-47-3	Chromium	0.004	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-48-4	Cobalt	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-50-8	Copper	0.004	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7439-92-1	Lead	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7439-96-5	Manganese	0.0569		Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7439-97-6	Mercury	0.0000263	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7439-98-7	Molybdenum	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-02-0	Nickel	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7782-49-2	Selenium	0.00867		Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-22-4	Silver	0.002	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		Metals	7440-28-0	Thallium	0.002	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-36-0	Antimony	0.002	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-38-2	Arsenic	0.00496		N
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-39-3	Barium	0.051		N
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-41-7	Beryllium	0.002	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-43-9	Cadmium	0.002	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-47-3	Chromium	0.004	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-48-4	Cobalt	0.002	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-50-8	Copper	0.00409		N
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7439-92-1	Lead	0.002	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7439-96-5	Manganese	0.361		N
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7439-97-6	Mercury	0.0000263	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7439-98-7	Molybdenum	0.00293		N
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-02-0	Nickel	0.00317		N
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7782-49-2	Selenium	0.0112		N
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-22-4	Silver	0.002	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		Metals	7440-28-0	Thallium	0.002	U	Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-36-0	Antimony	0.002	U	N

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-38-2	Arsenic	0.00574		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-39-3	Barium	0.0557		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-41-7	Beryllium	0.002	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-43-9	Cadmium	0.002	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-47-3	Chromium	0.004	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-48-4	Cobalt	0.002	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-50-8	Copper	0.00488		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7439-92-1	Lead	0.002	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7439-96-5	Manganese	0.367		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7439-97-6	Mercury	0.0000263	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7439-98-7	Molybdenum	0.00311		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-02-0	Nickel	0.00367		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7782-49-2	Selenium	0.0115		Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-22-4	Silver	0.002	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		Metals	7440-28-0	Thallium	0.002	U	N
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	90-12-0	1-Methylnaphthalene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	91-57-6	2-Methylnaphthalene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	83-32-9	Acenaphthene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	208-96-8	Acenaphthylene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	120-12-7	Anthracene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	56-55-3	Benzo(a)anthracene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	50-32-8	Benzo(a)pyrene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	205-99-2	Benzo(b)fluoranthene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	191-24-2	Benzo(g,h,i)perylene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	207-08-9	Benzo(k)fluoranthene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	218-01-9	Chrysene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	53-70-3	Dibenz(a,h)anthracene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	206-44-0	Fluoranthene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	86-73-7	Fluorene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	193-39-5	Indeno(1,2,3-c,d)Pyrene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	91-20-3	Naphthalene	0.000388	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	85-01-8	Phenanthrene	0.000194	U	Y
D-MW25	N	07-Nov-19	D-MW25	26.48		PAH	129-00-0	Pyrene	0.000194	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	90-12-0	1-Methylnaphthalene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	91-57-6	2-Methylnaphthalene	0.000187	U	Y

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	83-32-9	Acenaphthene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	208-96-8	Acenaphthylene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	120-12-7	Anthracene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	56-55-3	Benzo(a)anthracene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	50-32-8	Benzo(a)pyrene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	205-99-2	Benzo(b)fluoranthene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	191-24-2	Benzo(g,h,i)perylene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	207-08-9	Benzo(k)fluoranthene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	218-01-9	Chrysene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	53-70-3	Dibenz(a,h)anthracene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	206-44-0	Fluoranthene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	86-73-7	Fluorene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	193-39-5	Indeno(1,2,3-c,d)Pyrene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	91-20-3	Naphthalene	0.000373	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	85-01-8	Phenanthrene	0.000187	U	Y
D-MW26	N	07-Nov-19	D-MW26	28.79		PAH	129-00-0	Pyrene	0.000187	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	90-12-0	1-Methylnaphthalene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	91-57-6	2-Methylnaphthalene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	83-32-9	Acenaphthene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	208-96-8	Acenaphthylene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	120-12-7	Anthracene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	56-55-3	Benzo(a)anthracene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	50-32-8	Benzo(a)pyrene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	205-99-2	Benzo(b)fluoranthene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	191-24-2	Benzo(g,h,i)perylene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	207-08-9	Benzo(k)fluoranthene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	218-01-9	Chrysene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	53-70-3	Dibenz(a,h)anthracene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	206-44-0	Fluoranthene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	86-73-7	Fluorene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	193-39-5	Indeno(1,2,3-c,d)Pyrene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	91-20-3	Naphthalene	0.000391	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	85-01-8	Phenanthrene	0.000196	U	Y
D-MW27	N	07-Nov-19	D-MW27	29.38		PAH	129-00-0	Pyrene	0.000196	U	Y
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	90-12-0	1-Methylnaphthalene	0.000194	U	N

Attachment 5

Data Used in HHRA for Groundwater

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Location	Sample Type	Sample Date	Sample ID	Depth (Feet)	Method	Chemical Group	CAS #	Unique Analyte name	Result (mg/L)	Flag	Best Result
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	91-57-6	2-Methylnaphthalene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	83-32-9	Acenaphthene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	208-96-8	Acenaphthylene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	120-12-7	Anthracene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	56-55-3	Benzo(a)anthracene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	50-32-8	Benzo(a)pyrene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	205-99-2	Benzo(b)fluoranthene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	191-24-2	Benzo(g,h,i)perylene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	207-08-9	Benzo(k)fluoranthene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	218-01-9	Chrysene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	53-70-3	Dibenz(a,h)anthracene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	206-44-0	Fluoranthene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	86-73-7	Fluorene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	193-39-5	Indeno(1,2,3-c,d)Pyrene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	91-20-3	Naphthalene	0.000388	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	85-01-8	Phenanthrene	0.000194	U	N
D-MW27	FD	07-Nov-19	D-FD01-110719	29.38		PAH	129-00-0	Pyrene	0.000194	U	N

Notes:

CAS = chemical abstract service

FD = field duplicate

J = estimated

mg/L = milligram(s) per liter

N= normal

PAH = polycyclic aromatic hydrocarbons

U = nondetect

VOC = volatile organic compound

Attachment 6

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B11	Onsite	D-B11-1.0-1.5	30-Oct-19	1.0-1.5	Benzo(a)anthracene	56-55-3	mg/kg	0.232		0.232	0.232	1	0.1	0.0232	0.0232
B11	Onsite	D-B11-1.0-1.5	30-Oct-19	1.0-1.5	Benzo(a)pyrene	50-32-8	mg/kg	0.39		0.39	0.39	1	1	0.39	0.39
B11	Onsite	D-B11-1.0-1.5	30-Oct-19	1.0-1.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.575		0.575	0.575	1	0.1	0.0575	0.0575
B11	Onsite	D-B11-1.0-1.5	30-Oct-19	1.0-1.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.168		0.168	0.168	1	0.01	0.00168	0.00168
B11	Onsite	D-B11-1.0-1.5	30-Oct-19	1.0-1.5	Chrysene	218-01-9	mg/kg	0.37		0.37	0.37	1	0.001	0.00037	0.00037
B11	Onsite	D-B11-1.0-1.5	30-Oct-19	1.0-1.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00833	U	0	0.004165	0	1	0.004165	0
B11	Onsite	D-B11-1.0-1.5	30-Oct-19	1.0-1.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.317		0.317	0.317	1	0.1	0.0317	0.0317
B11	**Onsite**	**D-B11-1.0-1.5**			**BaP TEQ**									**0.51**	**0.50**
B11	Onsite	D-B11-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.105		0.105	0.105	1	0.1	0.0105	0.0105
B11	Onsite	D-B11-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.161		0.161	0.161	1	1	0.161	0.161
B11	Onsite	D-B11-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.258		0.258	0.258	1	0.1	0.0258	0.0258
B11	Onsite	D-B11-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0642		0.0642	0.0642	1	0.01	0.000642	0.000642
B11	Onsite	D-B11-10.0-10.5	30-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.167		0.167	0.167	1	0.001	0.000167	0.000167
B11	Onsite	D-B11-10.0-10.5	30-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00832	U	0	0.00416	0	1	0.00416	0
B11	Onsite	D-B11-10.0-10.5	30-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.142		0.142	0.142	1	0.1	0.0142	0.0142
B11	**Onsite**	**D-B11-10.0-10.5**			**BaP TEQ**									**0.22**	**0.21**
B11	Onsite	D-B11-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	1.1		1.1	1.1	1	0.1	0.11	0.11
B11	Onsite	D-B11-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	1.66		1.66	1.66	1	1	1.66	1.66
B11	Onsite	D-B11-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	2.9		2.9	2.9	1	0.1	0.29	0.29
B11	Onsite	D-B11-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.729		0.729	0.729	1	0.01	0.00729	0.00729
B11	Onsite	D-B11-2.5-3.0	30-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	1.79		1.79	1.79	1	0.001	0.00179	0.00179
B11	Onsite	D-B11-2.5-3.0	30-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B11	Onsite	D-B11-2.5-3.0	30-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.37		1.37	1.37	1	0.1	0.137	0.137
B11	**Onsite**	**D-B11-2.5-3.0**			**BaP TEQ**									**2.21**	**2.21**
B11	Onsite	D-B11-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.132		0.132	0.132	1	0.1	0.0132	0.0132
B11	Onsite	D-B11-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.215		0.215	0.215	1	1	0.215	0.215
B11	Onsite	D-B11-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.388		0.388	0.388	1	0.1	0.0388	0.0388
B11	Onsite	D-B11-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0912		0.0912	0.0912	1	0.01	0.000912	0.000912
B11	Onsite	D-B11-5.0-5.5	30-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.23		0.23	0.23	1	0.001	0.00023	0.00023
B11	Onsite	D-B11-5.0-5.5	30-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B11	Onsite	D-B11-5.0-5.5	30-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.234		0.234	0.234	1	0.1	0.0234	0.0234
B11	**Onsite**	**D-B11-5.0-5.5**			**BaP TEQ**									**0.30**	**0.29**
B11	Onsite	D-B11-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.175		0.175	0.175	1	0.1	0.0175	0.0175
B11	Onsite	D-B11-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.28		0.28	0.28	1	1	0.28	0.28
B11	Onsite	D-B11-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.465		0.465	0.465	1	0.1	0.0465	0.0465
B11	Onsite	D-B11-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.103		0.103	0.103	1	0.01	0.00103	0.00103
B11	Onsite	D-B11-7.5-8.0	30-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.302		0.302	0.302	1	0.001	0.000302	0.000302
B11	Onsite	D-B11-7.5-8.0	30-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00834	U	0	0.00417	0	1	0.00417	0
B11	Onsite	D-B11-7.5-8.0	30-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.252		0.252	0.252	1	0.1	0.0252	0.0252

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B11	**Onsite**	**D-B11-7.5-8.0**			**BaP TEQ**									**0.37**	**0.37**
B12	Onsite	D-B12-1.0-1.5	31-Oct-19	1.0-1.5	Benzo(a)anthracene	56-55-3	mg/kg	0.811		0.811	0.811	1	0.1	0.0811	0.0811
B12	Onsite	D-B12-1.0-1.5	31-Oct-19	1.0-1.5	Benzo(a)pyrene	50-32-8	mg/kg	1.68		1.68	1.68	1	1	1.68	1.68
B12	Onsite	D-B12-1.0-1.5	31-Oct-19	1.0-1.5	Benzo(b)fluoranthene	205-99-2	mg/kg	1.75		1.75	1.75	1	0.1	0.175	0.175
B12	Onsite	D-B12-1.0-1.5	31-Oct-19	1.0-1.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.52		0.52	0.52	1	0.01	0.0052	0.0052
B12	Onsite	D-B12-1.0-1.5	31-Oct-19	1.0-1.5	Chrysene	218-01-9	mg/kg	1.04		1.04	1.04	1	0.001	0.00104	0.00104
B12	Onsite	D-B12-1.0-1.5	31-Oct-19	1.0-1.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0666	U	0	0.0333	0	1	0.0333	0
B12	Onsite	D-B12-1.0-1.5	31-Oct-19	1.0-1.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.44		1.44	1.44	1	0.1	0.144	0.144
B12	**Onsite**	**D-B12-1.0-1.5**			**BaP TEQ**									**2.12**	**2.09**
B12	Onsite	D-B12-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0968		0.0968	0.0968	1	0.1	0.00968	0.00968
B12	Onsite	D-B12-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.18		0.18	0.18	1	1	0.18	0.18
B12	Onsite	D-B12-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.193		0.193	0.193	1	0.1	0.0193	0.0193
B12	Onsite	D-B12-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0597		0.0597	0.0597	1	0.01	0.000597	0.000597
B12	Onsite	D-B12-10.0-10.5	31-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.12		0.12	0.12	1	0.001	0.00012	0.00012
B12	Onsite	D-B12-10.0-10.5	31-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B12	Onsite	D-B12-10.0-10.5	31-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.149		0.149	0.149	1	0.1	0.0149	0.0149
B12	**Onsite**	**D-B12-10.0-10.5**			**BaP TEQ**									**0.23**	**0.22**
B12	Onsite	D-B12-2.5-3.0	31-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00481		0.00481	0.00481	1	0.1	0.000481	0.000481
B12	Onsite	D-B12-2.5-3.0	31-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00724		0.00724	0.00724	1	1	0.00724	0.00724
B12	Onsite	D-B12-2.5-3.0	31-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00736		0.00736	0.00736	1	0.1	0.000736	0.000736
B12	Onsite	D-B12-2.5-3.0	31-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00198		0.00198	0.00198	1	0.01	0.0000198	0.0000198
B12	Onsite	D-B12-2.5-3.0	31-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.00503		0.00503	0.00503	1	0.001	0.00000503	0.00000503
B12	Onsite	D-B12-2.5-3.0	31-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B12	Onsite	D-B12-2.5-3.0	31-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00503		0.00503	0.00503	1	0.1	0.000503	0.000503
B12	**Onsite**	**D-B12-2.5-3.0**			**BaP TEQ**									**0.01**	**0.01**
B12	Onsite	D-B12-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	1.24	J	1.24	1.24	1	0.1	0.124	0.124
B12	Onsite	D-B12-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	2.65	J	2.65	2.65	1	1	2.65	2.65
B12	Onsite	D-B12-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	2.58	J	2.58	2.58	1	0.1	0.258	0.258
B12	Onsite	D-B12-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.777	J	0.777	0.777	1	0.01	0.00777	0.00777
B12	Onsite	D-B12-5.0-5.5	31-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	1.61	J	1.61	1.61	1	0.001	0.00161	0.00161
B12	Onsite	D-B12-5.0-5.5	31-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0334	U	0	0.0167	0	1	0.0167	0
B12	Onsite	D-B12-5.0-5.5	31-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	2.16	J	2.16	2.16	1	0.1	0.216	0.216
B12	**Onsite**	**D-B12-5.0-5.5**			**BaP TEQ**									**3.27**	**3.26**
B12	Onsite	D-B12-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	2.79	J	2.79	2.79	1	0.1	0.279	0.279
B12	Onsite	D-B12-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	5.93	J	5.93	5.93	1	1	5.93	5.93
B12	Onsite	D-B12-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	6.16	J	6.16	6.16	1	0.1	0.616	0.616
B12	Onsite	D-B12-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	2.26	J	2.26	2.26	1	0.01	0.0226	0.0226
B12	Onsite	D-B12-7.5-8.0	31-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	3.59	J	3.59	3.59	1	0.001	0.00359	0.00359
B12	Onsite	D-B12-7.5-8.0	31-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.669	U	0	0.3345	0	1	0.3345	0
B12	Onsite	D-B12-7.5-8.0	31-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	5.01	J	5.01	5.01	1	0.1	0.501	0.501

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B12	**Onsite**	**D-B12-7.5-8.0**			**BaP TEQ**									**7.69**	**7.35**
B12	Onsite	D-FD02-103119	31-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.175	J	0.175	0.175	1	0.1	0.0175	0.0175
B12	Onsite	D-FD02-103119	31-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.386	J	0.386	0.386	1	1	0.386	0.386
B12	Onsite	D-FD02-103119	31-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.418	J	0.418	0.418	1	0.1	0.0418	0.0418
B12	Onsite	D-FD02-103119	31-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0903	J	0.0903	0.0903	1	0.01	0.000903	0.000903
B12	Onsite	D-FD02-103119	31-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.228	J	0.228	0.228	1	0.001	0.000228	0.000228
B12	Onsite	D-FD02-103119	31-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0166	U	0	0.0083	0	1	0.0083	0
B12	Onsite	D-FD02-103119	31-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.317	J	0.317	0.317	1	0.1	0.0317	0.0317
B12	**Onsite**	**D-FD02-103119**			**BaP TEQ**									**0.49**	**0.48**
B13	Onsite	D-B13-1.0-1.5	31-Oct-19	1.0-1.5	Benzo(a)anthracene	56-55-3	mg/kg	17.5	J	17.5	17.5	1	0.1	1.75	1.75
B13	Onsite	D-B13-1.0-1.5	31-Oct-19	1.0-1.5	Benzo(a)pyrene	50-32-8	mg/kg	28.9	J	28.9	28.9	1	1	28.9	28.9
B13	Onsite	D-B13-1.0-1.5	31-Oct-19	1.0-1.5	Benzo(b)fluoranthene	205-99-2	mg/kg	26.4	J	26.4	26.4	1	0.1	2.64	2.64
B13	Onsite	D-B13-1.0-1.5	31-Oct-19	1.0-1.5	Benzo(k)fluoranthene	207-08-9	mg/kg	7.09	J	7.09	7.09	1	0.01	0.0709	0.0709
B13	Onsite	D-B13-1.0-1.5	31-Oct-19	1.0-1.5	Chrysene	218-01-9	mg/kg	20.7	J	20.7	20.7	1	0.001	0.0207	0.0207
B13	Onsite	D-B13-1.0-1.5	31-Oct-19	1.0-1.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0667	U	0	0.03335	0	1	0.03335	0
B13	Onsite	D-B13-1.0-1.5	31-Oct-19	1.0-1.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	21.5	J	21.5	21.5	1	0.1	2.15	2.15
B13	**Onsite**	**D-B13-1.0-1.5**			**BaP TEQ**									**35.56**	**35.53**
B13	Onsite	D-B13-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	1.57		1.57	1.57	1	0.1	0.157	0.157
B13	Onsite	D-B13-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	2.44		2.44	2.44	1	1	2.44	2.44
B13	Onsite	D-B13-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	2.39		2.39	2.39	1	0.1	0.239	0.239
B13	Onsite	D-B13-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.825		0.825	0.825	1	0.01	0.00825	0.00825
B13	Onsite	D-B13-10.0-10.5	31-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	1.86		1.86	1.86	1	0.001	0.00186	0.00186
B13	Onsite	D-B13-10.0-10.5	31-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0334	U	0	0.0167	0	1	0.0167	0
B13	Onsite	D-B13-10.0-10.5	31-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.78		1.78	1.78	1	0.1	0.178	0.178
B13	**Onsite**	**D-B13-10.0-10.5**			**BaP TEQ**									**3.04**	**3.02**
B13	Onsite	D-B13-2.5-3.0	31-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	7.25		7.25	7.25	1	0.1	0.725	0.725
B13	Onsite	D-B13-2.5-3.0	31-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	9.99		9.99	9.99	1	1	9.99	9.99
B13	Onsite	D-B13-2.5-3.0	31-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	10		10	10	1	0.1	1	1
B13	Onsite	D-B13-2.5-3.0	31-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	2.73		2.73	2.73	1	0.01	0.0273	0.0273
B13	Onsite	D-B13-2.5-3.0	31-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	7.71		7.71	7.71	1	0.001	0.00771	0.00771
B13	Onsite	D-B13-2.5-3.0	31-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.333	U	0	0.1665	0	1	0.1665	0
B13	Onsite	D-B13-2.5-3.0	31-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	6.18		6.18	6.18	1	0.1	0.618	0.618
B13	**Onsite**	**D-B13-2.5-3.0**			**BaP TEQ**									**12.53**	**12.37**
B13	Onsite	D-B13-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	2.13		2.13	2.13	1	0.1	0.213	0.213
B13	Onsite	D-B13-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	3.21		3.21	3.21	1	1	3.21	3.21
B13	Onsite	D-B13-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	3.49		3.49	3.49	1	0.1	0.349	0.349
B13	Onsite	D-B13-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	1.05		1.05	1.05	1	0.01	0.0105	0.0105
B13	Onsite	D-B13-5.0-5.5	31-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	2.69		2.69	2.69	1	0.001	0.00269	0.00269
B13	Onsite	D-B13-5.0-5.5	31-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0666	U	0	0.0333	0	1	0.0333	0
B13	Onsite	D-B13-5.0-5.5	31-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	2.04		2.04	2.04	1	0.1	0.204	0.204

Attachment 6

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B13	**Onsite**	**D-B13-5.0-5.5**			**BaP TEQ**									**4.02**	**3.99**
B13	Onsite	D-B13-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	7.72		7.72	7.72	1	0.1	0.772	0.772
B13	Onsite	D-B13-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	11.1		11.1	11.1	1	1	11.1	11.1
B13	Onsite	D-B13-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	10.3		10.3	10.3	1	0.1	1.03	1.03
B13	Onsite	D-B13-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	3.68		3.68	3.68	1	0.01	0.0368	0.0368
B13	Onsite	D-B13-7.5-8.0	31-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	8.48		8.48	8.48	1	0.001	0.00848	0.00848
B13	Onsite	D-B13-7.5-8.0	31-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	1.26		1.26	1.26	1	1	1.26	1.26
B13	Onsite	D-B13-7.5-8.0	31-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	7.63		7.63	7.63	1	0.1	0.763	0.763
B13	**Onsite**	**D-B13-7.5-8.0**			**BaP TEQ**									**14.97**	**14.97**
B14	Onsite	D-B14-1.0-1.5	29-Oct-19	1.0-1.5	Benzo(a)anthracene	56-55-3	mg/kg	0.017		0.017	0.017	1	0.1	0.0017	0.0017
B14	Onsite	D-B14-1.0-1.5	29-Oct-19	1.0-1.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0157		0.0157	0.0157	1	1	0.0157	0.0157
B14	Onsite	D-B14-1.0-1.5	29-Oct-19	1.0-1.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.044		0.044	0.044	1	0.1	0.0044	0.0044
B14	Onsite	D-B14-1.0-1.5	29-Oct-19	1.0-1.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0109		0.0109	0.0109	1	0.01	0.000109	0.000109
B14	Onsite	D-B14-1.0-1.5	29-Oct-19	1.0-1.5	Chrysene	218-01-9	mg/kg	0.0228		0.0228	0.0228	1	0.001	0.0000228	0.0000228
B14	Onsite	D-B14-1.0-1.5	29-Oct-19	1.0-1.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B14	Onsite	D-B14-1.0-1.5	29-Oct-19	1.0-1.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0081		0.0081	0.0081	1	0.1	0.00081	0.00081
B14	**Onsite**	**D-B14-1.0-1.5**			**BaP TEQ**									**0.02**	**0.02**
B14	Onsite	D-B14-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.131		0.131	0.131	1	0.1	0.0131	0.0131
B14	Onsite	D-B14-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.159		0.159	0.159	1	1	0.159	0.159
B14	Onsite	D-B14-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.223		0.223	0.223	1	0.1	0.0223	0.0223
B14	Onsite	D-B14-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0745		0.0745	0.0745	1	0.01	0.000745	0.000745
B14	Onsite	D-B14-10.0-10.5	29-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.138		0.138	0.138	1	0.001	0.000138	0.000138
B14	Onsite	D-B14-10.0-10.5	29-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B14	Onsite	D-B14-10.0-10.5	29-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0959		0.0959	0.0959	1	0.1	0.00959	0.00959
B14	**Onsite**	**D-B14-10.0-10.5**			**BaP TEQ**									**0.21**	**0.20**
B14	Onsite	D-B14-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0144		0.0144	0.0144	1	0.1	0.00144	0.00144
B14	Onsite	D-B14-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0165		0.0165	0.0165	1	1	0.0165	0.0165
B14	Onsite	D-B14-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0212		0.0212	0.0212	1	0.1	0.00212	0.00212
B14	Onsite	D-B14-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00832	U	0	0.00416	0	0.01	0.0000416	0
B14	Onsite	D-B14-2.5-3.0	29-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.0129		0.0129	0.0129	1	0.001	0.0000129	0.0000129
B14	Onsite	D-B14-2.5-3.0	29-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00832	U	0	0.00416	0	1	0.00416	0
B14	Onsite	D-B14-2.5-3.0	29-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0209		0.0209	0.0209	1	0.1	0.00209	0.00209
B14	**Onsite**	**D-B14-2.5-3.0**			**BaP TEQ**									**0.03**	**0.02**
B14	Onsite	D-B14-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00726		0.00726	0.00726	1	0.1	0.000726	0.000726
B14	Onsite	D-B14-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0162		0.0162	0.0162	1	1	0.0162	0.0162
B14	Onsite	D-B14-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0181		0.0181	0.0181	1	0.1	0.00181	0.00181
B14	Onsite	D-B14-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00539		0.00539	0.00539	1	0.01	0.0000539	0.0000539
B14	Onsite	D-B14-5.0-5.5	29-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00966		0.00966	0.00966	1	0.001	0.00000966	0.00000966
B14	Onsite	D-B14-5.0-5.5	29-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B14	Onsite	D-B14-5.0-5.5	29-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0191		0.0191	0.0191	1	0.1	0.00191	0.00191

Attachment 6

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B14	**Onsite**	**D-B14-5.0-5.5**			**BaP TEQ**									**0.02**	**0.02**
B14	Onsite	D-B14-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.274		0.274	0.274	1	0.1	0.0274	0.0274
B14	Onsite	D-B14-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.301		0.301	0.301	1	1	0.301	0.301
B14	Onsite	D-B14-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.382		0.382	0.382	1	0.1	0.0382	0.0382
B14	Onsite	D-B14-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.128		0.128	0.128	1	0.01	0.00128	0.00128
B14	Onsite	D-B14-7.5-8.0	29-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.269		0.269	0.269	1	0.001	0.000269	0.000269
B14	Onsite	D-B14-7.5-8.0	29-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00833	U	0	0.004165	0	1	0.004165	0
B14	Onsite	D-B14-7.5-8.0	29-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.219		0.219	0.219	1	0.1	0.0219	0.0219
B14	**Onsite**	**D-B14-7.5-8.0**			**BaP TEQ**									**0.39**	**0.39**
B15	Onsite	D-B15-1.0-1.5	01-Nov-19	1.0-1.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00833	U	0	0.004165	0	0.1	0.0004165	0
B15	Onsite	D-B15-1.0-1.5	01-Nov-19	1.0-1.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0115		0.0115	0.0115	1	1	0.0115	0.0115
B15	Onsite	D-B15-1.0-1.5	01-Nov-19	1.0-1.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0168		0.0168	0.0168	1	0.1	0.00168	0.00168
B15	Onsite	D-B15-1.0-1.5	01-Nov-19	1.0-1.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00833	U	0	0.004165	0	0.01	0.00004165	0
B15	Onsite	D-B15-1.0-1.5	01-Nov-19	1.0-1.5	Chrysene	218-01-9	mg/kg	0.0141		0.0141	0.0141	1	0.001	0.0000141	0.0000141
B15	Onsite	D-B15-1.0-1.5	01-Nov-19	1.0-1.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00833	U	0	0.004165	0	1	0.004165	0
B15	Onsite	D-B15-1.0-1.5	01-Nov-19	1.0-1.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0102		0.0102	0.0102	1	0.1	0.00102	0.00102
B15	**Onsite**	**D-B15-1.0-1.5**			**BaP TEQ**									**0.02**	**0.01**
B15	Onsite	D-B15-10.0-10.5	01-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0935		0.0935	0.0935	1	0.1	0.00935	0.00935
B15	Onsite	D-B15-10.0-10.5	01-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.144		0.144	0.144	1	1	0.144	0.144
B15	Onsite	D-B15-10.0-10.5	01-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.162		0.162	0.162	1	0.1	0.0162	0.0162
B15	Onsite	D-B15-10.0-10.5	01-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0546		0.0546	0.0546	1	0.01	0.000546	0.000546
B15	Onsite	D-B15-10.0-10.5	01-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.106		0.106	0.106	1	0.001	0.000106	0.000106
B15	Onsite	D-B15-10.0-10.5	01-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B15	Onsite	D-B15-10.0-10.5	01-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0862		0.0862	0.0862	1	0.1	0.00862	0.00862
B15	**Onsite**	**D-B15-10.0-10.5**			**BaP TEQ**									**0.19**	**0.18**
B15	Onsite	D-B15-14.5-15.0	01-Nov-19	14.5-15.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0731		0.0731	0.0731	1	0.1	0.00731	0.00731
B15	Onsite	D-B15-14.5-15.0	01-Nov-19	14.5-15.0	Benzo(a)pyrene	50-32-8	mg/kg	0.112		0.112	0.112	1	1	0.112	0.112
B15	Onsite	D-B15-14.5-15.0	01-Nov-19	14.5-15.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.125		0.125	0.125	1	0.1	0.0125	0.0125
B15	Onsite	D-B15-14.5-15.0	01-Nov-19	14.5-15.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0398		0.0398	0.0398	1	0.01	0.000398	0.000398
B15	Onsite	D-B15-14.5-15.0	01-Nov-19	14.5-15.0	Chrysene	218-01-9	mg/kg	0.0856		0.0856	0.0856	1	0.001	0.0000856	0.0000856
B15	Onsite	D-B15-14.5-15.0	01-Nov-19	14.5-15.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B15	Onsite	D-B15-14.5-15.0	01-Nov-19	14.5-15.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0688		0.0688	0.0688	1	0.1	0.00688	0.00688
B15	**Onsite**	**D-B15-14.5-15.0**			**BaP TEQ**									**0.14**	**0.14**
B15	Onsite	D-B15-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0242	J	0.0242	0.0242	1	0.1	0.00242	0.00242
B15	Onsite	D-B15-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0329	J	0.0329	0.0329	1	1	0.0329	0.0329
B15	Onsite	D-B15-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0454	J	0.0454	0.0454	1	0.1	0.00454	0.00454
B15	Onsite	D-B15-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00917	J	0.00917	0.00917	1	0.01	0.0000917	0.0000917
B15	Onsite	D-B15-2.5-3.0	01-Nov-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.0341	J	0.0341	0.0341	1	0.001	0.0000341	0.0000341
B15	Onsite	D-B15-2.5-3.0	01-Nov-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00833	U	0	0.004165	0	1	0.004165	0
B15	Onsite	D-B15-2.5-3.0	01-Nov-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0149	J	0.0149	0.0149	1	0.1	0.00149	0.00149

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B15	**Onsite**	**D-B15-2.5-3.0**			**BaP TEQ**									**0.05**	**0.04**
B15	Onsite	D-B15-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.131		0.131	0.131	1	0.1	0.0131	0.0131
B15	Onsite	D-B15-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.201		0.201	0.201	1	1	0.201	0.201
B15	Onsite	D-B15-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.227		0.227	0.227	1	0.1	0.0227	0.0227
B15	Onsite	D-B15-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0709		0.0709	0.0709	1	0.01	0.000709	0.000709
B15	Onsite	D-B15-5.0-5.5	01-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.151		0.151	0.151	1	0.001	0.000151	0.000151
B15	Onsite	D-B15-5.0-5.5	01-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0333	U	0	0.01665	0	1	0.01665	0
B15	Onsite	D-B15-5.0-5.5	01-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.116		0.116	0.116	1	0.1	0.0116	0.0116
B15	**Onsite**	**D-B15-5.0-5.5**			**BaP TEQ**									**0.27**	**0.25**
B15	Onsite	D-B15-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.658		0.658	0.658	1	0.1	0.0658	0.0658
B15	Onsite	D-B15-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	1.07		1.07	1.07	1	1	1.07	1.07
B15	Onsite	D-B15-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	1.27		1.27	1.27	1	0.1	0.127	0.127
B15	Onsite	D-B15-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.324		0.324	0.324	1	0.01	0.00324	0.00324
B15	Onsite	D-B15-7.5-8.0	01-Nov-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.777		0.777	0.777	1	0.001	0.000777	0.000777
B15	Onsite	D-B15-7.5-8.0	01-Nov-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0334	U	0	0.0167	0	1	0.0167	0
B15	Onsite	D-B15-7.5-8.0	01-Nov-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.611		0.611	0.611	1	0.1	0.0611	0.0611
B15	**Onsite**	**D-B15-7.5-8.0**			**BaP TEQ**									**1.34**	**1.33**
B15	Onsite	D-FD03-110119	01-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.286		0.286	0.286	1	0.1	0.0286	0.0286
B15	Onsite	D-FD03-110119	01-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.467		0.467	0.467	1	1	0.467	0.467
B15	Onsite	D-FD03-110119	01-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.519		0.519	0.519	1	0.1	0.0519	0.0519
B15	Onsite	D-FD03-110119	01-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.163		0.163	0.163	1	0.01	0.00163	0.00163
B15	Onsite	D-FD03-110119	01-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.339		0.339	0.339	1	0.001	0.000339	0.000339
B15	Onsite	D-FD03-110119	01-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0333	U	0	0.01665	0	1	0.01665	0
B15	Onsite	D-FD03-110119	01-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.28		0.28	0.28	1	0.1	0.028	0.028
B15	**Onsite**	**D-FD03-110119**			**BaP TEQ**									**0.59**	**0.58**
B15	Onsite	D-FD04-110119	01-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.275		0.275	0.275	1	0.1	0.0275	0.0275
B15	Onsite	D-FD04-110119	01-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.487		0.487	0.487	1	1	0.487	0.487
B15	Onsite	D-FD04-110119	01-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.588		0.588	0.588	1	0.1	0.0588	0.0588
B15	Onsite	D-FD04-110119	01-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.148		0.148	0.148	1	0.01	0.00148	0.00148
B15	Onsite	D-FD04-110119	01-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.358		0.358	0.358	1	0.001	0.000358	0.000358
B15	Onsite	D-FD04-110119	01-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0333	U	0	0.01665	0	1	0.01665	0
B15	Onsite	D-FD04-110119	01-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.301		0.301	0.301	1	0.1	0.0301	0.0301
B15	**Onsite**	**D-FD04-110119**			**BaP TEQ**									**0.62**	**0.61**
B16	Onsite	D-B16-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0245		0.0245	0.0245	1	0.1	0.00245	0.00245
B16	Onsite	D-B16-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0376		0.0376	0.0376	1	1	0.0376	0.0376
B16	Onsite	D-B16-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0742		0.0742	0.0742	1	0.1	0.00742	0.00742
B16	Onsite	D-B16-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0169		0.0169	0.0169	1	0.01	0.000169	0.000169
B16	Onsite	D-B16-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0341		0.0341	0.0341	1	0.001	0.0000341	0.0000341
B16	Onsite	D-B16-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00333	U	0	0.001665	0	1	0.001665	0
B16	Onsite	D-B16-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0188		0.0188	0.0188	1	0.1	0.00188	0.00188

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B16	**Onsite**	**D-B16-0-102719**			**BaP TEQ**									**0.05**	**0.05**
B16	Onsite	D-B16-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.103		0.103	0.103	1	0.1	0.0103	0.0103
B16	Onsite	D-B16-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.169		0.169	0.169	1	1	0.169	0.169
B16	Onsite	D-B16-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.184		0.184	0.184	1	0.1	0.0184	0.0184
B16	Onsite	D-B16-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0487		0.0487	0.0487	1	0.01	0.000487	0.000487
B16	Onsite	D-B16-10.0-10.5	29-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.116		0.116	0.116	1	0.001	0.000116	0.000116
B16	Onsite	D-B16-10.0-10.5	29-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00831	U	0	0.004155	0	1	0.004155	0
B16	Onsite	D-B16-10.0-10.5	29-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.126		0.126	0.126	1	0.1	0.0126	0.0126
B16	**Onsite**	**D-B16-10.0-10.5**			**BaP TEQ**									**0.22**	**0.21**
B16	Onsite	D-B16-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.238		0.238	0.238	1	0.1	0.0238	0.0238
B16	Onsite	D-B16-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.433		0.433	0.433	1	1	0.433	0.433
B16	Onsite	D-B16-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.486		0.486	0.486	1	0.1	0.0486	0.0486
B16	Onsite	D-B16-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.146		0.146	0.146	1	0.01	0.00146	0.00146
B16	Onsite	D-B16-2.5-3.0	29-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.326		0.326	0.326	1	0.001	0.000326	0.000326
B16	Onsite	D-B16-2.5-3.0	29-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B16	Onsite	D-B16-2.5-3.0	29-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.263		0.263	0.263	1	0.1	0.0263	0.0263
B16	**Onsite**	**D-B16-2.5-3.0**			**BaP TEQ**									**0.53**	**0.53**
B16	Onsite	D-B16-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.092		0.092	0.092	1	0.1	0.0092	0.0092
B16	Onsite	D-B16-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.174		0.174	0.174	1	1	0.174	0.174
B16	Onsite	D-B16-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.202		0.202	0.202	1	0.1	0.0202	0.0202
B16	Onsite	D-B16-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0625		0.0625	0.0625	1	0.01	0.000625	0.000625
B16	Onsite	D-B16-5.0-5.5	29-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.112		0.112	0.112	1	0.001	0.000112	0.000112
B16	Onsite	D-B16-5.0-5.5	29-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00334	U	0	0.00167	0	1	0.00167	0
B16	Onsite	D-B16-5.0-5.5	29-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0892		0.0892	0.0892	1	0.1	0.00892	0.00892
B16	**Onsite**	**D-B16-5.0-5.5**			**BaP TEQ**									**0.21**	**0.21**
B16	Onsite	D-B16-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.83		0.83	0.83	1	0.1	0.083	0.083
B16	Onsite	D-B16-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	1.31		1.31	1.31	1	1	1.31	1.31
B16	Onsite	D-B16-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	1.41		1.41	1.41	1	0.1	0.141	0.141
B16	Onsite	D-B16-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.363		0.363	0.363	1	0.01	0.00363	0.00363
B16	Onsite	D-B16-7.5-8.0	29-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.975		0.975	0.975	1	0.001	0.000975	0.000975
B16	Onsite	D-B16-7.5-8.0	29-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.171		0.171	0.171	1	1	0.171	0.171
B16	Onsite	D-B16-7.5-8.0	29-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.944		0.944	0.944	1	0.1	0.0944	0.0944
B16	**Onsite**	**D-B16-7.5-8.0**			**BaP TEQ**									**1.80**	**1.80**
B17	Onsite	D-FD01-102919	29-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.338		0.338	0.338	1	0.1	0.0338	0.0338
B17	Onsite	D-FD01-102919	29-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.641		0.641	0.641	1	1	0.641	0.641
B17	Onsite	D-FD01-102919	29-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.766		0.766	0.766	1	0.1	0.0766	0.0766
B17	Onsite	D-FD01-102919	29-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.178		0.178	0.178	1	0.01	0.00178	0.00178
B17	Onsite	D-FD01-102919	29-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.434		0.434	0.434	1	0.001	0.000434	0.000434
B17	Onsite	D-FD01-102919	29-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00833	U	0	0.004165	0	1	0.004165	0
B17	Onsite	D-FD01-102919	29-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.329		0.329	0.329	1	0.1	0.0329	0.0329

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B17	**Onsite**	**D-FD01-102919**			**BaP TEQ**									**0.79**	**0.79**
B17	Onsite	D-B17-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0583		0.0583	0.0583	1	0.1	0.00583	0.00583
B17	Onsite	D-B17-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0835		0.0835	0.0835	1	1	0.0835	0.0835
B17	Onsite	D-B17-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.135		0.135	0.135	1	0.1	0.0135	0.0135
B17	Onsite	D-B17-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0474		0.0474	0.0474	1	0.01	0.000474	0.000474
B17	Onsite	D-B17-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0819		0.0819	0.0819	1	0.001	0.0000819	0.0000819
B17	Onsite	D-B17-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00834	U	0	0.00417	0	1	0.00417	0
B17	Onsite	D-B17-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0362		0.0362	0.0362	1	0.1	0.00362	0.00362
B17	**Onsite**	**D-B17-0-102719**			**BaP TEQ**									**0.11**	**0.11**
B17	Onsite	D-B17-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.409		0.409	0.409	1	0.1	0.0409	0.0409
B17	Onsite	D-B17-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.747		0.747	0.747	1	1	0.747	0.747
B17	Onsite	D-B17-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.714		0.714	0.714	1	0.1	0.0714	0.0714
B17	Onsite	D-B17-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.246		0.246	0.246	1	0.01	0.00246	0.00246
B17	Onsite	D-B17-10.0-10.5	30-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.503		0.503	0.503	1	0.001	0.000503	0.000503
B17	Onsite	D-B17-10.0-10.5	30-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00836	U	0	0.00418	0	1	0.00418	0
B17	Onsite	D-B17-10.0-10.5	30-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.633		0.633	0.633	1	0.1	0.0633	0.0633
B17	**Onsite**	**D-B17-10.0-10.5**			**BaP TEQ**									**0.93**	**0.93**
B17	Onsite	D-B17-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	2.71		2.71	2.71	1	1	2.71	2.71
B17	Onsite	D-B17-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	5.31		5.31	5.31	1	0.1	0.531	0.531
B17	Onsite	D-B17-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	4.89		4.89	4.89	1	0.01	0.0489	0.0489
B17	Onsite	D-B17-2.5-3.0	30-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	1.37		1.37	1.37	1	0.001	0.00137	0.00137
B17	Onsite	D-B17-2.5-3.0	30-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	3.29		3.29	3.29	1	1	3.29	3.29
B17	Onsite	D-B17-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0167	U	0	0.00835	0	0.1	0.000835	0
B17	Onsite	D-B17-2.5-3.0	30-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	4.31		4.31	4.31	1	0.1	0.431	0.431
B17	**Onsite**	**D-B17-2.5-3.0**			**BaP TEQ**					0	0	1		**7.94**	**7.94**
B17	Onsite	D-B17-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.295		0.295	0.295	1	0.1	0.0295	0.0295
B17	Onsite	D-B17-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.544		0.544	0.544	1	1	0.544	0.544
B17	Onsite	D-B17-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.576		0.576	0.576	1	0.1	0.0576	0.0576
B17	Onsite	D-B17-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.177		0.177	0.177	1	0.01	0.00177	0.00177
B17	Onsite	D-B17-5.0-5.5	30-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.351		0.351	0.351	1	0.001	0.000351	0.000351
B17	Onsite	D-B17-5.0-5.5	30-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0668	U	0	0.0334	0	1	0.0334	0
B17	Onsite	D-B17-5.0-5.5	30-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.451		0.451	0.451	1	0.1	0.0451	0.0451
B17	**Onsite**	**D-B17-5.0-5.5**			**BaP TEQ**									**0.71**	**0.68**
B17	Onsite	D-B17-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	1.27		1.27	1.27	1	0.1	0.127	0.127
B17	Onsite	D-B17-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	2.33		2.33	2.33	1	1	2.33	2.33
B17	Onsite	D-B17-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	2.37		2.37	2.37	1	0.1	0.237	0.237
B17	Onsite	D-B17-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.799		0.799	0.799	1	0.01	0.00799	0.00799
B17	Onsite	D-B17-7.5-8.0	30-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	1.6		1.6	1.6	1	0.001	0.0016	0.0016
B17	Onsite	D-B17-7.5-8.0	30-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.21		0.21	0.21	1	1	0.21	0.21
B17	Onsite	D-B17-7.5-8.0	30-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.35		1.35	1.35	1	0.1	0.135	0.135

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B17	**Onsite**	**D-B17-7.5-8.0**			**BaP TEQ**									**3.05**	**3.05**
B19	Onsite	D-B19-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0204		0.0204	0.0204	1	0.1	0.00204	0.00204
B19	Onsite	D-B19-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0322		0.0322	0.0322	1	1	0.0322	0.0322
B19	Onsite	D-B19-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0594		0.0594	0.0594	1	0.1	0.00594	0.00594
B19	Onsite	D-B19-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0159		0.0159	0.0159	1	0.01	0.000159	0.000159
B19	Onsite	D-B19-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.032		0.032	0.032	1	0.001	0.000032	0.000032
B19	Onsite	D-B19-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00334	U	0	0.00167	0	1	0.00167	0
B19	Onsite	D-B19-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0176		0.0176	0.0176	1	0.1	0.00176	0.00176
B19	**Onsite**	**D-B19-0-102719**			**BaP TEQ**									**0.04**	**0.04**
B19	Onsite	D-B19-10.0-10.5	02-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0583		0.0583	0.0583	1	0.1	0.00583	0.00583
B19	Onsite	D-B19-10.0-10.5	02-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.108		0.108	0.108	1	1	0.108	0.108
B19	Onsite	D-B19-10.0-10.5	02-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.126		0.126	0.126	1	0.1	0.0126	0.0126
B19	Onsite	D-B19-10.0-10.5	02-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.032		0.032	0.032	1	0.01	0.00032	0.00032
B19	Onsite	D-B19-10.0-10.5	02-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.072		0.072	0.072	1	0.001	0.000072	0.000072
B19	Onsite	D-B19-10.0-10.5	02-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B19	Onsite	D-B19-10.0-10.5	02-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0684		0.0684	0.0684	1	0.1	0.00684	0.00684
B19	**Onsite**	**D-B19-10.0-10.5**			**BaP TEQ**									**0.13**	**0.13**
B19	Onsite	D-B19-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0224		0.0224	0.0224	1	0.1	0.00224	0.00224
B19	Onsite	D-B19-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.045		0.045	0.045	1	1	0.045	0.045
B19	Onsite	D-B19-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0611		0.0611	0.0611	1	0.1	0.00611	0.00611
B19	Onsite	D-B19-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0185		0.0185	0.0185	1	0.01	0.000185	0.000185
B19	Onsite	D-B19-2.5-3.0	01-Nov-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.0319		0.0319	0.0319	1	0.001	0.0000319	0.0000319
B19	Onsite	D-B19-2.5-3.0	01-Nov-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B19	Onsite	D-B19-2.5-3.0	01-Nov-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0284		0.0284	0.0284	1	0.1	0.00284	0.00284
B19	**Onsite**	**D-B19-2.5-3.0**			**BaP TEQ**									**0.06**	**0.06**
B19	Onsite	D-B19-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00263		0.00263	0.00263	1	0.1	0.000263	0.000263
B19	Onsite	D-B19-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00269		0.00269	0.00269	1	1	0.00269	0.00269
B19	Onsite	D-B19-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00365		0.00365	0.00365	1	0.1	0.000365	0.000365
B19	Onsite	D-B19-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B19	Onsite	D-B19-5.0-5.5	01-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00286		0.00286	0.00286	1	0.001	0.00000286	0.00000286
B19	Onsite	D-B19-5.0-5.5	01-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B19	Onsite	D-B19-5.0-5.5	01-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B19	**Onsite**	**D-B19-5.0-5.5**			**BaP TEQ**									**0.004**	**0.003**
B19	Onsite	D-B19-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0227		0.0227	0.0227	1	0.1	0.00227	0.00227
B19	Onsite	D-B19-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.042		0.042	0.042	1	1	0.042	0.042
B19	Onsite	D-B19-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0504		0.0504	0.0504	1	0.1	0.00504	0.00504
B19	Onsite	D-B19-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0148		0.0148	0.0148	1	0.01	0.000148	0.000148
B19	Onsite	D-B19-7.5-8.0	01-Nov-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.0284		0.0284	0.0284	1	0.001	0.0000284	0.0000284
B19	Onsite	D-B19-7.5-8.0	01-Nov-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B19	Onsite	D-B19-7.5-8.0	01-Nov-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0277		0.0277	0.0277	1	0.1	0.00277	0.00277

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B19	**Onsite**	**D-B19-7.5-8.0**			**BaP TEQ**									**0.05**	**0.05**
B20	Onsite	D-B20-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.129		0.129	0.129	1	0.1	0.0129	0.0129
B20	Onsite	D-B20-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.23		0.23	0.23	1	1	0.23	0.23
B20	Onsite	D-B20-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.286		0.286	0.286	1	0.1	0.0286	0.0286
B20	Onsite	D-B20-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0737		0.0737	0.0737	1	0.01	0.000737	0.000737
B20	Onsite	D-B20-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.17		0.17	0.17	1	0.001	0.00017	0.00017
B20	Onsite	D-B20-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B20	Onsite	D-B20-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.146		0.146	0.146	1	0.1	0.0146	0.0146
B20	**Onsite**	**D-B20-0-102719**			**BaP TEQ**									**0.29**	**0.29**
B20	Onsite	D-B20-14.5-15.0	02-Nov-19	14.5-15.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00539		0.00539	0.00539	1	0.1	0.000539	0.000539
B20	Onsite	D-B20-14.5-15.0	02-Nov-19	14.5-15.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00886		0.00886	0.00886	1	1	0.00886	0.00886
B20	Onsite	D-B20-14.5-15.0	02-Nov-19	14.5-15.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0144		0.0144	0.0144	1	0.1	0.00144	0.00144
B20	Onsite	D-B20-14.5-15.0	02-Nov-19	14.5-15.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00348		0.00348	0.00348	1	0.01	0.0000348	0.0000348
B20	Onsite	D-B20-14.5-15.0	02-Nov-19	14.5-15.0	Chrysene	218-01-9	mg/kg	0.00747		0.00747	0.00747	1	0.001	0.00000747	0.00000747
B20	Onsite	D-B20-14.5-15.0	02-Nov-19	14.5-15.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B20	Onsite	D-B20-14.5-15.0	02-Nov-19	14.5-15.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00549		0.00549	0.00549	1	0.1	0.000549	0.000549
B20	**Onsite**	**D-B20-14.5-15.0**			**BaP TEQ**									**0.01**	**0.01**
B20	Onsite	D-B20-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0502	J	0.0502	0.0502	1	0.1	0.00502	0.00502
B20	Onsite	D-B20-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0716	J	0.0716	0.0716	1	1	0.0716	0.0716
B20	Onsite	D-B20-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0991	J	0.0991	0.0991	1	0.1	0.00991	0.00991
B20	Onsite	D-B20-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0371		0.0371	0.0371	1	0.01	0.000371	0.000371
B20	Onsite	D-B20-2.5-3.0	30-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.0711	J	0.0711	0.0711	1	0.001	0.0000711	0.0000711
B20	Onsite	D-B20-2.5-3.0	30-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B20	Onsite	D-B20-2.5-3.0	30-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0454	J	0.0454	0.0454	1	0.1	0.00454	0.00454
B20	**Onsite**	**D-B20-2.5-3.0**			**BaP TEQ**									**0.10**	**0.09**
B20	Onsite	D-B20-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.66		0.66	0.66	1	0.1	0.066	0.066
B20	Onsite	D-B20-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	1.34		1.34	1.34	1	1	1.34	1.34
B20	Onsite	D-B20-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	1.34		1.34	1.34	1	0.1	0.134	0.134
B20	Onsite	D-B20-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.398		0.398	0.398	1	0.01	0.00398	0.00398
B20	Onsite	D-B20-5.0-5.5	30-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.833		0.833	0.833	1	0.001	0.000833	0.000833
B20	Onsite	D-B20-5.0-5.5	30-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.175		0.175	0.175	1	1	0.175	0.175
B20	Onsite	D-B20-5.0-5.5	30-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.08		1.08	1.08	1	0.1	0.108	0.108
B20	**Onsite**	**D-B20-5.0-5.5**			**BaP TEQ**									**1.83**	**1.83**
B20	Onsite	D-B20-7.5-8.0	02-Nov-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0261		0.0261	0.0261	1	0.1	0.00261	0.00261
B20	Onsite	D-B20-7.5-8.0	02-Nov-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0401		0.0401	0.0401	1	1	0.0401	0.0401
B20	Onsite	D-B20-7.5-8.0	02-Nov-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.076		0.076	0.076	1	0.1	0.0076	0.0076
B20	Onsite	D-B20-7.5-8.0	02-Nov-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0181		0.0181	0.0181	1	0.01	0.000181	0.000181
B20	Onsite	D-B20-7.5-8.0	02-Nov-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.037		0.037	0.037	1	0.001	0.000037	0.000037
B20	Onsite	D-B20-7.5-8.0	02-Nov-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00541		0.00541	0.00541	1	1	0.00541	0.00541
B20	Onsite	D-B20-7.5-8.0	02-Nov-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0218		0.0218	0.0218	1	0.1	0.00218	0.00218

Attachment 6

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B20	**Onsite**	**D-B20-7.5-8.0**			**BaP TEQ**									**0.06**	**0.06**
B20	Onsite	D-B20-9.5-10.0	02-Nov-19	9.5-10.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0151		0.0151	0.0151	1	0.1	0.00151	0.00151
B20	Onsite	D-B20-9.5-10.0	02-Nov-19	9.5-10.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0227		0.0227	0.0227	1	1	0.0227	0.0227
B20	Onsite	D-B20-9.5-10.0	02-Nov-19	9.5-10.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0347		0.0347	0.0347	1	0.1	0.00347	0.00347
B20	Onsite	D-B20-9.5-10.0	02-Nov-19	9.5-10.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0107		0.0107	0.0107	1	0.01	0.000107	0.000107
B20	Onsite	D-B20-9.5-10.0	02-Nov-19	9.5-10.0	Chrysene	218-01-9	mg/kg	0.0203		0.0203	0.0203	1	0.001	0.0000203	0.0000203
B20	Onsite	D-B20-9.5-10.0	02-Nov-19	9.5-10.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B20	Onsite	D-B20-9.5-10.0	02-Nov-19	9.5-10.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0142		0.0142	0.0142	1	0.1	0.00142	0.00142
B20	**Onsite**	**D-B20-9.5-10.0**			**BaP TEQ**						0			**0.03**	**0.03**
B20	Onsite	D-FD01-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.176		0.176	0.176	1	0.1	0.0176	0.0176
B20	Onsite	D-FD01-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.309		0.309	0.309	1	1	0.309	0.309
B20	Onsite	D-FD01-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.4		0.4	0.4	1	0.1	0.04	0.04
B20	Onsite	D-FD01-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.105		0.105	0.105	1	0.01	0.00105	0.00105
B20	Onsite	D-FD01-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.233		0.233	0.233	1	0.001	0.000233	0.000233
B20	Onsite	D-FD01-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B20	Onsite	D-FD01-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.181		0.181	0.181	1	0.1	0.0181	0.0181
B20	**Onsite**	**D-FD01-102719**			**BaP TEQ**									**0.39**	**0.39**
B21	Onsite	D-B21-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.00832	U	0	0.00416	0	0.1	0.000416	0
B21	Onsite	D-B21-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.00832	U	0	0.00416	0	1	0.00416	0
B21	Onsite	D-B21-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0135		0.0135	0.0135	1	0.1	0.00135	0.00135
B21	Onsite	D-B21-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00832	U	0	0.00416	0	0.01	0.0000416	0
B21	Onsite	D-B21-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.00832	U	0	0.00416	0	0.001	0.00000416	0
B21	Onsite	D-B21-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00832	U	0	0.00416	0	1	0.00416	0
B21	Onsite	D-B21-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00832	U	0	0.00416	0	0.1	0.000416	0
B21	**Onsite**	**D-B21-0-102719**			**BaP TEQ**									**0.01**	**0.00**
B21	Onsite	D-B21-10.0-10.5	01-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	1.5		1.5	1.5	1	0.1	0.15	0.15
B21	Onsite	D-B21-10.0-10.5	01-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	2.78		2.78	2.78	1	1	2.78	2.78
B21	Onsite	D-B21-10.0-10.5	01-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	3.04		3.04	3.04	1	0.1	0.304	0.304
B21	Onsite	D-B21-10.0-10.5	01-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.792		0.792	0.792	1	0.01	0.00792	0.00792
B21	Onsite	D-B21-10.0-10.5	01-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	1.87		1.87	1.87	1	0.001	0.00187	0.00187
B21	Onsite	D-B21-10.0-10.5	01-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0333	U	0	0.01665	0	1	0.01665	0
B21	Onsite	D-B21-10.0-10.5	01-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.88		1.88	1.88	1	0.1	0.188	0.188
B21	**Onsite**	**D-B21-10.0-10.5**			**BaP TEQ**									**3.45**	**3.43**
B21	Onsite	D-B21-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	6.24		6.24	6.24	1	0.1	0.624	0.624
B21	Onsite	D-B21-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	11.8		11.8	11.8	1	1	11.8	11.8
B21	Onsite	D-B21-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	12.3		12.3	12.3	1	0.1	1.23	1.23
B21	Onsite	D-B21-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	3.69		3.69	3.69	1	0.01	0.0369	0.0369
B21	Onsite	D-B21-2.5-3.0	01-Nov-19	2.5-3.0	Chrysene	218-01-9	mg/kg	8.25		8.25	8.25	1	0.001	0.00825	0.00825
B21	Onsite	D-B21-2.5-3.0	01-Nov-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0334	U	0	0.0167	0	1	0.0167	0
B21	Onsite	D-B21-2.5-3.0	01-Nov-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	7.56		7.56	7.56	1	0.1	0.756	0.756

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B21	**Onsite**	**D-B21-2.5-3.0**			**BaP TEQ**									**14.47**	**14.46**
B21	Onsite	D-B21-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0863		0.0863	0.0863	1	0.1	0.00863	0.00863
B21	Onsite	D-B21-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.154		0.154	0.154	1	1	0.154	0.154
B21	Onsite	D-B21-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.164		0.164	0.164	1	0.1	0.0164	0.0164
B21	Onsite	D-B21-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.051		0.051	0.051	1	0.01	0.00051	0.00051
B21	Onsite	D-B21-5.0-5.5	01-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.101		0.101	0.101	1	0.001	0.000101	0.000101
B21	Onsite	D-B21-5.0-5.5	01-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0333	U	0	0.01665	0	1	0.01665	0
B21	Onsite	D-B21-5.0-5.5	01-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.101		0.101	0.101	1	0.1	0.0101	0.0101
B21	**Onsite**	**D-B21-5.0-5.5**			**BaP TEQ**									**0.21**	**0.19**
B21	Onsite	D-B21-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	1.51		1.51	1.51	1	0.1	0.151	0.151
B21	Onsite	D-B21-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	2.84		2.84	2.84	1	1	2.84	2.84
B21	Onsite	D-B21-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	3.16		3.16	3.16	1	0.1	0.316	0.316
B21	Onsite	D-B21-7.5-8.0	01-Nov-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.78		0.78	0.78	1	0.01	0.0078	0.0078
B21	Onsite	D-B21-7.5-8.0	01-Nov-19	7.5-8.0	Chrysene	218-01-9	mg/kg	1.91		1.91	1.91	1	0.001	0.00191	0.00191
B21	Onsite	D-B21-7.5-8.0	01-Nov-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0332	U	0	0.0166	0	1	0.0166	0
B21	Onsite	D-B21-7.5-8.0	01-Nov-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.95		1.95	1.95	1	0.1	0.195	0.195
B21	**Onsite**	**D-B21-7.5-8.0**			**BaP TEQ**									**3.53**	**3.51**
B21	Onsite	D-FD02-110119	01-Nov-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	4.91		4.91	4.91	1	0.1	0.491	0.491
B21	Onsite	D-FD02-110119	01-Nov-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	9.38		9.38	9.38	1	1	9.38	9.38
B21	Onsite	D-FD02-110119	01-Nov-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	9.84		9.84	9.84	1	0.1	0.984	0.984
B21	Onsite	D-FD02-110119	01-Nov-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	2.44		2.44	2.44	1	0.01	0.0244	0.0244
B21	Onsite	D-FD02-110119	01-Nov-19	2.5-3.0	Chrysene	218-01-9	mg/kg	6.3		6.3	6.3	1	0.001	0.0063	0.0063
B21	Onsite	D-FD02-110119	01-Nov-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0333	U	0	0.01665	0	1	0.01665	0
B21	Onsite	D-FD02-110119	01-Nov-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	5.88		5.88	5.88	1	0.1	0.588	0.588
B21	**Onsite**	**D-FD02-110119**			**BaP TEQ**									**11.49**	**11.47**
B23	Onsite	D-B23-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.116		0.116	0.116	1	0.1	0.0116	0.0116
B23	Onsite	D-B23-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.19		0.19	0.19	1	1	0.19	0.19
B23	Onsite	D-B23-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.273		0.273	0.273	1	0.1	0.0273	0.0273
B23	Onsite	D-B23-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0821		0.0821	0.0821	1	0.01	0.000821	0.000821
B23	Onsite	D-B23-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.149		0.149	0.149	1	0.001	0.000149	0.000149
B23	Onsite	D-B23-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00833	U	0	0.004165	0	1	0.004165	0
B23	Onsite	D-B23-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0881		0.0881	0.0881	1	0.1	0.00881	0.00881
B23	**Onsite**	**D-B23-0-102719**			**BaP TEQ**									**0.24**	**0.24**
B23	Onsite	D-B23-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00635	J	0.00635	0.00635	1	0.1	0.000635	0.000635
B23	Onsite	D-B23-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0133	J	0.0133	0.0133	1	1	0.0133	0.0133
B23	Onsite	D-B23-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0148	J	0.0148	0.0148	1	0.1	0.00148	0.00148
B23	Onsite	D-B23-5.0-5.5	31-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00424		0.00424	0.00424	1	0.01	0.0000424	0.0000424
B23	Onsite	D-B23-5.0-5.5	31-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00828	J	0.00828	0.00828	1	0.001	0.00000828	0.00000828
B23	Onsite	D-B23-5.0-5.5	31-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B23	Onsite	D-B23-5.0-5.5	31-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0125	J	0.0125	0.0125	1	0.1	0.00125	0.00125

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B23	**Onsite**	**D-B23-5.0-5.5**			**BaP TEQ**									**0.02**	**0.02**
B23	Onsite	D-B23-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B23	Onsite	D-B23-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00222		0.00222	0.00222	1	1	0.00222	0.00222
B23	Onsite	D-B23-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00248		0.00248	0.00248	1	0.1	0.000248	0.000248
B23	Onsite	D-B23-7.5-8.0	31-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B23	Onsite	D-B23-7.5-8.0	31-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B23	Onsite	D-B23-7.5-8.0	31-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B23	Onsite	D-B23-7.5-8.0	31-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00187		0.00187	0.00187	1	0.1	0.000187	0.000187
B23	**Onsite**	**D-B23-7.5-8.0**			**BaP TEQ**									**0.004**	**0.003**
B23	Onsite	D-B23-9.5-10.0	31-Oct-19	9.5-10.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00314		0.00314	0.00314	1	0.1	0.000314	0.000314
B23	Onsite	D-B23-9.5-10.0	31-Oct-19	9.5-10.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00579		0.00579	0.00579	1	1	0.00579	0.00579
B23	Onsite	D-B23-9.5-10.0	31-Oct-19	9.5-10.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00713		0.00713	0.00713	1	0.1	0.000713	0.000713
B23	Onsite	D-B23-9.5-10.0	31-Oct-19	9.5-10.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00175		0.00175	0.00175	1	0.01	0.0000175	0.0000175
B23	Onsite	D-B23-9.5-10.0	31-Oct-19	9.5-10.0	Chrysene	218-01-9	mg/kg	0.00392		0.00392	0.00392	1	0.001	0.00000392	0.00000392
B23	Onsite	D-B23-9.5-10.0	31-Oct-19	9.5-10.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B23	Onsite	D-B23-9.5-10.0	31-Oct-19	9.5-10.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00523		0.00523	0.00523	1	0.1	0.000523	0.000523
B23	**Onsite**	**D-B23-9.5-10.0**			**BaP TEQ**									**0.01**	**0.01**
B24	Onsite	D-FD03-103119	31-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.206	J	0.206	0.206	1	0.1	0.0206	0.0206
B24	Onsite	D-FD03-103119	31-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.322		0.322	0.322	1	1	0.322	0.322
B24	Onsite	D-FD03-103119	31-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.39		0.39	0.39	1	0.1	0.039	0.039
B24	Onsite	D-FD03-103119	31-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0828		0.0828	0.0828	1	0.01	0.000828	0.000828
B24	Onsite	D-FD03-103119	31-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.243	J	0.243	0.243	1	0.001	0.000243	0.000243
B24	Onsite	D-FD03-103119	31-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0333	U	0	0.01665	0	1	0.01665	0
B24	Onsite	D-FD03-103119	31-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.244		0.244	0.244	1	0.1	0.0244	0.0244
B24	**Onsite**	**D-FD03-103119**			**BaP TEQ**									**0.42**	**0.41**
B24	Onsite	D-B24-0-102719	28-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.394		0.394	0.394	1	0.1	0.0394	0.0394
B24	Onsite	D-B24-0-102719	28-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.814		0.814	0.814	1	1	0.814	0.814
B24	Onsite	D-B24-0-102719	28-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.898		0.898	0.898	1	0.1	0.0898	0.0898
B24	Onsite	D-B24-0-102719	28-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.274		0.274	0.274	1	0.01	0.00274	0.00274
B24	Onsite	D-B24-0-102719	28-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.523		0.523	0.523	1	0.001	0.000523	0.000523
B24	Onsite	D-B24-0-102719	28-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00333	U	0	0.001665	0	1	0.001665	0
B24	Onsite	D-B24-0-102719	28-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.369		0.369	0.369	1	0.1	0.0369	0.0369
B24	**Onsite**	**D-B24-0-102719**			**BaP TEQ**									**0.99**	**0.98**
B24	Onsite	D-B24-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.538		0.538	0.538	1	0.1	0.0538	0.0538
B24	Onsite	D-B24-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	1.22		1.22	1.22	1	1	1.22	1.22
B24	Onsite	D-B24-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	1.24		1.24	1.24	1	0.1	0.124	0.124
B24	Onsite	D-B24-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.341		0.341	0.341	1	0.01	0.00341	0.00341
B24	Onsite	D-B24-10.0-10.5	30-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.73		0.73	0.73	1	0.001	0.00073	0.00073
B24	Onsite	D-B24-10.0-10.5	30-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0334	U	0	0.0167	0	1	0.0167	0
B24	Onsite	D-B24-10.0-10.5	30-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.958		0.958	0.958	1	0.1	0.0958	0.0958

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B24	**Onsite**	**D-B24-10.0-10.5**			**BaP TEQ**									**1.51**	**1.50**
B24	Onsite	D-B24-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0102		0.0102	0.0102	1	0.1	0.00102	0.00102
B24	Onsite	D-B24-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0233		0.0233	0.0233	1	1	0.0233	0.0233
B24	Onsite	D-B24-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0232		0.0232	0.0232	1	0.1	0.00232	0.00232
B24	Onsite	D-B24-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00672		0.00672	0.00672	1	0.01	0.0000672	0.0000672
B24	Onsite	D-B24-2.5-3.0	30-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.0134		0.0134	0.0134	1	0.001	0.0000134	0.0000134
B24	Onsite	D-B24-2.5-3.0	30-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B24	Onsite	D-B24-2.5-3.0	30-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0178		0.0178	0.0178	1	0.1	0.00178	0.00178
B24	**Onsite**	**D-B24-2.5-3.0**			**BaP TEQ**									**0.03**	**0.03**
B24	Onsite	D-B24-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.063		0.063	0.063	1	0.1	0.0063	0.0063
B24	Onsite	D-B24-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.15		0.15	0.15	1	1	0.15	0.15
B24	Onsite	D-B24-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.147		0.147	0.147	1	0.1	0.0147	0.0147
B24	Onsite	D-B24-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0434		0.0434	0.0434	1	0.01	0.000434	0.000434
B24	Onsite	D-B24-5.0-5.5	30-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.0875		0.0875	0.0875	1	0.001	0.0000875	0.0000875
B24	Onsite	D-B24-5.0-5.5	30-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B24	Onsite	D-B24-5.0-5.5	30-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.108		0.108	0.108	1	0.1	0.0108	0.0108
B24	**Onsite**	**D-B24-5.0-5.5**			**BaP TEQ**									**0.18**	**0.18**
B24	Onsite	D-B24-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.491		0.491	0.491	1	0.1	0.0491	0.0491
B24	Onsite	D-B24-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	1.18		1.18	1.18	1	1	1.18	1.18
B24	Onsite	D-B24-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	1.24		1.24	1.24	1	0.1	0.124	0.124
B24	Onsite	D-B24-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.308		0.308	0.308	1	0.01	0.00308	0.00308
B24	Onsite	D-B24-7.5-8.0	30-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.707		0.707	0.707	1	0.001	0.000707	0.000707
B24	Onsite	D-B24-7.5-8.0	30-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B24	Onsite	D-B24-7.5-8.0	30-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.801		0.801	0.801	1	0.1	0.0801	0.0801
B24	**Onsite**	**D-B24-7.5-8.0**			**BaP TEQ**									**1.45**	**1.44**
B25	Onsite	D-B25-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.372		0.372	0.372	1	0.1	0.0372	0.0372
B25	Onsite	D-B25-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.626		0.626	0.626	1	1	0.626	0.626
B25	Onsite	D-B25-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.84		0.84	0.84	1	0.1	0.084	0.084
B25	Onsite	D-B25-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.223		0.223	0.223	1	0.01	0.00223	0.00223
B25	Onsite	D-B25-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.469		0.469	0.469	1	0.001	0.000469	0.000469
B25	Onsite	D-B25-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00832	U	0	0.00416	0	1	0.00416	0
B25	Onsite	D-B25-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.346		0.346	0.346	1	0.1	0.0346	0.0346
B25	**Onsite**	**D-B25-0-102719**			**BaP TEQ**									**0.79**	**0.78**
B25	Onsite	D-B25-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B25	Onsite	D-B25-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-B25-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B25	Onsite	D-B25-10.0-10.5	31-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B25	Onsite	D-B25-10.0-10.5	31-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B25	Onsite	D-B25-10.0-10.5	31-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-B25-10.0-10.5	31-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0

Attachment 6
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B25	**Onsite**	**D-B25-10.0-10.5**			**BaP TEQ**									**0.002**	**0.00**
B25	Onsite	D-B25-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00274		0.00274	0.00274	1	0.1	0.000274	0.000274
B25	Onsite	D-B25-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00357		0.00357	0.00357	1	1	0.00357	0.00357
B25	Onsite	D-B25-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00531		0.00531	0.00531	1	0.1	0.000531	0.000531
B25	Onsite	D-B25-2.5-3.0	30-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B25	Onsite	D-B25-2.5-3.0	30-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.0032		0.0032	0.0032	1	0.001	0.0000032	0.0000032
B25	Onsite	D-B25-2.5-3.0	30-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-B25-2.5-3.0	30-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0025		0.0025	0.0025	1	0.1	0.00025	0.00025
B25	**Onsite**	**D-B25-2.5-3.0**			**BaP TEQ**									**0.01**	**0.00**
B25	Onsite	D-B25-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00294		0.00294	0.00294	1	0.1	0.000294	0.000294
B25	Onsite	D-B25-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00501		0.00501	0.00501	1	1	0.00501	0.00501
B25	Onsite	D-B25-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0068		0.0068	0.0068	1	0.1	0.00068	0.00068
B25	Onsite	D-B25-5.0-5.5	30-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B25	Onsite	D-B25-5.0-5.5	30-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00407		0.00407	0.00407	1	0.001	0.00000407	0.00000407
B25	Onsite	D-B25-5.0-5.5	30-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-B25-5.0-5.5	30-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00452		0.00452	0.00452	1	0.1	0.000452	0.000452
B25	**Onsite**	**D-B25-5.0-5.5**			**BaP TEQ**									**0.01**	**0.01**
B25	Onsite	D-B25-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00205		0.00205	0.00205	1	0.1	0.000205	0.000205
B25	Onsite	D-B25-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00301		0.00301	0.00301	1	1	0.00301	0.00301
B25	Onsite	D-B25-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00432		0.00432	0.00432	1	0.1	0.000432	0.000432
B25	Onsite	D-B25-7.5-8.0	30-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B25	Onsite	D-B25-7.5-8.0	30-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.00258		0.00258	0.00258	1	0.001	0.00000258	0.00000258
B25	Onsite	D-B25-7.5-8.0	30-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B25	Onsite	D-B25-7.5-8.0	30-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00286		0.00286	0.00286	1	0.1	0.000286	0.000286
B25	**Onsite**	**D-B25-7.5-8.0**			**BaP TEQ**									**0.005**	**0.004**
B26	Onsite	D-B26-0-102719	28-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.036		0.036	0.036	1	0.1	0.0036	0.0036
B26	Onsite	D-B26-0-102719	28-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0755		0.0755	0.0755	1	1	0.0755	0.0755
B26	Onsite	D-B26-0-102719	28-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.106		0.106	0.106	1	0.1	0.0106	0.0106
B26	Onsite	D-B26-0-102719	28-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0289		0.0289	0.0289	1	0.01	0.000289	0.000289
B26	Onsite	D-B26-0-102719	28-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0479		0.0479	0.0479	1	0.001	0.0000479	0.0000479
B26	Onsite	D-B26-0-102719	28-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00334	U	0	0.00167	0	1	0.00167	0
B26	Onsite	D-B26-0-102719	28-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0417		0.0417	0.0417	1	0.1	0.00417	0.00417
B26	**Onsite**	**D-B26-0-102719**			**BaP TEQ**									**0.10**	**0.09**
B26	Onsite	D-B26-10.0-10.5	02-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00834	U	0	0.00417	0	0.1	0.000417	0
B26	Onsite	D-B26-10.0-10.5	02-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0107		0.0107	0.0107	1	1	0.0107	0.0107
B26	Onsite	D-B26-10.0-10.5	02-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0163		0.0163	0.0163	1	0.1	0.00163	0.00163
B26	Onsite	D-B26-10.0-10.5	02-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00834	U	0	0.00417	0	0.01	0.0000417	0
B26	Onsite	D-B26-10.0-10.5	02-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.00933		0.00933	0.00933	1	0.001	0.00000933	0.00000933
B26	Onsite	D-B26-10.0-10.5	02-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00834	U	0	0.00417	0	1	0.00417	0
B26	Onsite	D-B26-10.0-10.5	02-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0102		0.0102	0.0102	1	0.1	0.00102	0.00102

Attachment 6

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B26	**Onsite**	**D-B26-10.0-10.5**			**BaP TEQ**									**0.02**	**0.01**
B26	Onsite	D-B26-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00264		0.00264	0.00264	1	0.1	0.000264	0.000264
B26	Onsite	D-B26-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00395		0.00395	0.00395	1	1	0.00395	0.00395
B26	Onsite	D-B26-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00455		0.00455	0.00455	1	0.1	0.000455	0.000455
B26	Onsite	D-B26-2.5-3.0	01-Nov-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B26	Onsite	D-B26-2.5-3.0	01-Nov-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.00307		0.00307	0.00307	1	0.001	0.00000307	0.00000307
B26	Onsite	D-B26-2.5-3.0	01-Nov-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-2.5-3.0	01-Nov-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0035		0.0035	0.0035	1	0.1	0.00035	0.00035
B26	**Onsite**	**D-B26-2.5-3.0**			**BaP TEQ**									**0.01**	**0.01**
B26	Onsite	D-B26-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00177		0.00177	0.00177	1	0.1	0.000177	0.000177
B26	Onsite	D-B26-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00299		0.00299	0.00299	1	1	0.00299	0.00299
B26	Onsite	D-B26-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.004		0.004	0.004	1	0.1	0.0004	0.0004
B26	Onsite	D-B26-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B26	Onsite	D-B26-5.0-5.5	01-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00231		0.00231	0.00231	1	0.001	0.00000231	0.00000231
B26	Onsite	D-B26-5.0-5.5	01-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-5.0-5.5	01-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00299		0.00299	0.00299	1	0.1	0.000299	0.000299
B26	**Onsite**	**D-B26-5.0-5.5**			**BaP TEQ**									**0.005**	**0.004**
B26	Onsite	D-B26-7.5-8.0	02-Nov-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	Onsite	D-B26-7.5-8.0	02-Nov-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-7.5-8.0	02-Nov-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	Onsite	D-B26-7.5-8.0	02-Nov-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B26	Onsite	D-B26-7.5-8.0	02-Nov-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B26	Onsite	D-B26-7.5-8.0	02-Nov-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-7.5-8.0	02-Nov-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	**Onsite**	**D-B26-7.5-8.0**			**BaP TEQ**									**0.002**	**0.00**
B26	Onsite	D-FD05-110119	01-Nov-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	Onsite	D-FD05-110119	01-Nov-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-FD05-110119	01-Nov-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	Onsite	D-FD05-110119	01-Nov-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B26	Onsite	D-FD05-110119	01-Nov-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B26	Onsite	D-FD05-110119	01-Nov-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-FD05-110119	01-Nov-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	**Onsite**	**D-FD05-110119**			**BaP TEQ**									**0.002**	**0.00**

Notes:

BaP TEQ = Benzo(a)pyrene toxicity equivalent

U = nondetect

UJ = nondetect estimated

J = detect estimated concentration

RL = reporting limit

RPF = relative potency factor

Attachment 7

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B18	Background (Offsite)	D-B18-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0425		0.0425	0.0425	1	0.1	0.00425	0.00425
B18	Background (Offsite)	D-B18-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0583		0.0583	0.0583	1	1	0.0583	0.0583
B18	Background (Offsite)	D-B18-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0912		0.0912	0.0912	1	0.1	0.00912	0.00912
B18	Background (Offsite)	D-B18-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0261		0.0261	0.0261	1	0.01	0.000261	0.000261
B18	Background (Offsite)	D-B18-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0591		0.0591	0.0591	1	0.001	0.0000591	0.0000591
B18	Background (Offsite)	D-B18-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00834	U	0	0.00417	0	1	0.00417	0
B18	Background (Offsite)	D-B18-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0326		0.0326	0.0326	1	0.1	0.00326	0.00326
B18	Background (Offsite)	D-B18-0-102719			**BaP TEQ**									**0.08**	**0.08**
B18	Background (Offsite)	D-B18-10.0-10.5	05-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B18	Background (Offsite)	D-B18-10.0-10.5	05-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B18	Background (Offsite)	D-B18-10.0-10.5	05-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B18	Background (Offsite)	D-B18-10.0-10.5	05-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B18	Background (Offsite)	D-B18-10.0-10.5	05-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B18	Background (Offsite)	D-B18-10.0-10.5	05-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B18	Background (Offsite)	D-B18-10.0-10.5	05-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B18	Background (Offsite)	D-B18-10.0-10.5			**BaP TEQ**									**0.002**	**0.00**
B18	Background (Offsite)	D-B18-2.0-2.5	28-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0276		0.0276	0.0276	1	0.1	0.00276	0.00276
B18	Background (Offsite)	D-B18-2.0-2.5	28-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0474		0.0474	0.0474	1	1	0.0474	0.0474
B18	Background (Offsite)	D-B18-2.0-2.5	28-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0698		0.0698	0.0698	1	0.1	0.00698	0.00698
B18	Background (Offsite)	D-B18-2.0-2.5	28-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.019		0.019	0.019	1	0.01	0.00019	0.00019
B18	Background (Offsite)	D-B18-2.0-2.5	28-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.0356		0.0356	0.0356	1	0.001	0.0000356	0.0000356
B18	Background (Offsite)	D-B18-2.0-2.5	28-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00334	U	0	0.00167	0	1	0.00167	0
B18	Background (Offsite)	D-B18-2.0-2.5	28-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0218		0.0218	0.0218	1	0.1	0.00218	0.00218
B18	Background (Offsite)	D-B18-2.0-2.5			**BaP TEQ**									**0.06**	**0.06**
B18	Background (Offsite)	D-B18-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0643	J	0.0643	0.0643	1	0.1	0.00643	0.00643
B18	Background (Offsite)	D-B18-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.115	J	0.115	0.115	1	1	0.115	0.115
B18	Background (Offsite)	D-B18-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.179	J	0.179	0.179	1	0.1	0.0179	0.0179
B18	Background (Offsite)	D-B18-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0389	J	0.0389	0.0389	1	0.01	0.000389	0.000389
B18	Background (Offsite)	D-B18-5.0-5.5	28-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.0865	J	0.0865	0.0865	1	0.001	0.0000865	0.0000865
B18	Background (Offsite)	D-B18-5.0-5.5	28-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00333	U	0	0.001665	0	1	0.001665	0
B18	Background (Offsite)	D-B18-5.0-5.5	28-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0541	J	0.0541	0.0541	1	0.1	0.00541	0.00541
B18	Background (Offsite)	D-B18-5.0-5.5			**BaP TEQ**									**0.15**	**0.15**
B18	Background (Offsite)	D-B18-7.0-7.5	28-Oct-19	7.0-7.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0195		0.0195	0.0195	1	0.1	0.00195	0.00195
B18	Background (Offsite)	D-B18-7.0-7.5	28-Oct-19	7.0-7.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0353		0.0353	0.0353	1	1	0.0353	0.0353
B18	Background (Offsite)	D-B18-7.0-7.5	28-Oct-19	7.0-7.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0528		0.0528	0.0528	1	0.1	0.00528	0.00528
B18	Background (Offsite)	D-B18-7.0-7.5	28-Oct-19	7.0-7.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0151		0.0151	0.0151	1	0.01	0.000151	0.000151
B18	Background (Offsite)	D-B18-7.0-7.5	28-Oct-19	7.0-7.5	Chrysene	218-01-9	mg/kg	0.025		0.025	0.025	1	0.001	0.000025	0.000025
B18	Background (Offsite)	D-B18-7.0-7.5	28-Oct-19	7.0-7.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B18	Background (Offsite)	D-B18-7.0-7.5	28-Oct-19	7.0-7.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0169		0.0169	0.0169	1	0.1	0.00169	0.00169
B18	Background (Offsite)	D-B18-7.0-7.5			**BaP TEQ**									**0.05**	**0.04**
B18	Background (Offsite)	D-FD03-102819	28-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00597	J	0.00597	0.00597	1	0.1	0.000597	0.000597
B18	Background (Offsite)	D-FD03-102819	28-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0106	J	0.0106	0.0106	1	1	0.0106	0.0106
B18	Background (Offsite)	D-FD03-102819	28-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0149	J	0.0149	0.0149	1	0.1	0.00149	0.00149

Attachment 7

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B18	Background (Offsite)	D-FD03-102819	28-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00427	J	0.00427	0.00427	1	0.01	0.0000427	0.0000427
B18	Background (Offsite)	D-FD03-102819	28-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00728	J	0.00728	0.00728	1	0.001	0.00000728	0.00000728
B18	Background (Offsite)	D-FD03-102819	28-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B18	Background (Offsite)	D-FD03-102819	28-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00495	J	0.00495	0.00495	1	0.1	0.000495	0.000495
B18	Background (Offsite)	D-FD03-102819			**BaP TEQ**									**0.01**	**0.01**
B22	Background (Offsite)	D-B22-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0688		0.0688	0.0688	1	0.1	0.00688	0.00688
B22	Background (Offsite)	D-B22-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.101		0.101	0.101	1	1	0.101	0.101
B22	Background (Offsite)	D-B22-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.154		0.154	0.154	1	0.1	0.0154	0.0154
B22	Background (Offsite)	D-B22-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0454		0.0454	0.0454	1	0.01	0.000454	0.000454
B22	Background (Offsite)	D-B22-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0859		0.0859	0.0859	1	0.001	0.0000859	0.0000859
B22	Background (Offsite)	D-B22-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00832	U	0	0.00416	0	1	0.00416	0
B22	Background (Offsite)	D-B22-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0522		0.0522	0.0522	1	0.1	0.00522	0.00522
B22	Background (Offsite)	D-B22-0-102719			**BaP TEQ**									**0.13**	**0.13**
B22	Background (Offsite)	D-B22-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B22	Background (Offsite)	D-B22-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B22	Background (Offsite)	D-B22-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B22	Background (Offsite)	D-B22-2.5-3.0	29-Oct-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B22	Background (Offsite)	D-B22-2.5-3.0	29-Oct-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B22	Background (Offsite)	D-B22-2.5-3.0	29-Oct-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B22	Background (Offsite)	D-B22-2.5-3.0	29-Oct-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B22	Background (Offsite)	D-B22-2.5-3.0			**BaP TEQ**									**0.002**	**0.00**
B22	Background (Offsite)	D-B22-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0199		0.0199	0.0199	1	0.1	0.00199	0.00199
B22	Background (Offsite)	D-B22-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0248		0.0248	0.0248	1	1	0.0248	0.0248
B22	Background (Offsite)	D-B22-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0379		0.0379	0.0379	1	0.1	0.00379	0.00379
B22	Background (Offsite)	D-B22-7.5-8.0	29-Oct-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0122		0.0122	0.0122	1	0.01	0.000122	0.000122
B22	Background (Offsite)	D-B22-7.5-8.0	29-Oct-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.0253		0.0253	0.0253	1	0.001	0.0000253	0.0000253
B22	Background (Offsite)	D-B22-7.5-8.0	29-Oct-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B22	Background (Offsite)	D-B22-7.5-8.0	29-Oct-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0143		0.0143	0.0143	1	0.1	0.00143	0.00143
B22	Background (Offsite)	D-B22-7.5-8.0			**BaP TEQ**									**0.03**	**0.03**
B27	Background (Offsite)	D-B27-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B27	Background (Offsite)	D-B27-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0021		0.0021	0.0021	1	1	0.0021	0.0021
B27	Background (Offsite)	D-B27-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00294		0.00294	0.00294	1	0.1	0.000294	0.000294
B27	Background (Offsite)	D-B27-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B27	Background (Offsite)	D-B27-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.00178		0.00178	0.00178	1	0.001	0.00000178	0.00000178
B27	Background (Offsite)	D-B27-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B27	Background (Offsite)	D-B27-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0018		0.0018	0.0018	1	0.1	0.00018	0.00018
B27	Background (Offsite)	D-B27-0-102719			**BaP TEQ**									**0.003**	**0.003**
B27	Background (Offsite)	D-B27-10.0-10.5	03-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-10.0-10.5	03-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-10.0-10.5	03-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-10.0-10.5	03-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-B27-10.0-10.5	03-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-B27-10.0-10.5	03-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0

Attachment 7

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B27	Background (Offsite)	D-B27-10.0-10.5	03-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-10.0-10.5			**BaP TEQ**									**0.002**	**0.00**
B27	Background (Offsite)	D-B27-2.5-3.0	03-Nov-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-2.5-3.0	03-Nov-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-2.5-3.0	03-Nov-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-2.5-3.0	03-Nov-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-B27-2.5-3.0	03-Nov-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-B27-2.5-3.0	03-Nov-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-2.5-3.0	03-Nov-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-2.5-3.0			**BaP TEQ**									**0.002**	**0.00**
B27	Background (Offsite)	D-B27-5.0-5.5	03-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-5.0-5.5	03-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-5.0-5.5	03-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-5.0-5.5	03-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-B27-5.0-5.5	03-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-B27-5.0-5.5	03-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-5.0-5.5	03-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-5.0-5.5			**BaP TEQ**									**0.002**	**0.00**
B27	Background (Offsite)	D-B27-7.5-8.0	03-Nov-19	7.5-8.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-7.5-8.0	03-Nov-19	7.5-8.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-7.5-8.0	03-Nov-19	7.5-8.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00184		0.00184	0.00184	1	0.1	0.000184	0.000184
B27	Background (Offsite)	D-B27-7.5-8.0	03-Nov-19	7.5-8.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-B27-7.5-8.0	03-Nov-19	7.5-8.0	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-B27-7.5-8.0	03-Nov-19	7.5-8.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-7.5-8.0	03-Nov-19	7.5-8.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-7.5-8.0			**BaP TEQ**									**0.002**	**0.0002**
B27	Background (Offsite)	D-FD01-110319	03-Nov-19	2.5-3.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B27	Background (Offsite)	D-FD01-110319	03-Nov-19	2.5-3.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B27	Background (Offsite)	D-FD01-110319	03-Nov-19	2.5-3.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B27	Background (Offsite)	D-FD01-110319	03-Nov-19	2.5-3.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B27	Background (Offsite)	D-FD01-110319	03-Nov-19	2.5-3.0	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B27	Background (Offsite)	D-FD01-110319	03-Nov-19	2.5-3.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B27	Background (Offsite)	D-FD01-110319	03-Nov-19	2.5-3.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B27	Background (Offsite)	D-FD01-110319			**BaP TEQ**									**0.002**	**0.00**
B28	Background (Offsite)	D-B28-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0999		0.0999	0.0999	1	0.1	0.00999	0.00999
B28	Background (Offsite)	D-B28-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.116		0.116	0.116	1	1	0.116	0.116
B28	Background (Offsite)	D-B28-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.191		0.191	0.191	1	0.1	0.0191	0.0191
B28	Background (Offsite)	D-B28-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.051		0.051	0.051	1	0.01	0.00051	0.00051
B28	Background (Offsite)	D-B28-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.12		0.12	0.12	1	0.001	0.00012	0.00012
B28	Background (Offsite)	D-B28-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B28	Background (Offsite)	D-B28-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0564		0.0564	0.0564	1	0.1	0.00564	0.00564
B28	Background (Offsite)	D-B28-0-102719			**BaP TEQ**									**0.16**	**0.15**
B28	Background (Offsite)	D-B28-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00165	U	0	0.000825	0	0.1	0.0000825	0

Attachment 7
Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B28	Background (Offsite)	D-B28-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00165	U	0	0.000825	0	1	0.000825	0
B28	Background (Offsite)	D-B28-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00248		0.00248	0.00248	1	0.1	0.000248	0.000248
B28	Background (Offsite)	D-B28-10.0-10.5	29-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00165	U	0	0.000825	0	0.01	0.00000825	0
B28	Background (Offsite)	D-B28-10.0-10.5	29-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.00165	U	0	0.000825	0	0.001	0.000000825	0
B28	Background (Offsite)	D-B28-10.0-10.5	29-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00165	U	0	0.000825	0	1	0.000825	0
B28	Background (Offsite)	D-B28-10.0-10.5	29-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00165	U	0	0.000825	0	0.1	0.0000825	0
B28	Background (Offsite)	D-B28-10.0-10.5			**BaP TEQ**									**0.002**	**0.0002**
B28	Background (Offsite)	D-B28-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0104	J	0.0104	0.0104	1	0.1	0.00104	0.00104
B28	Background (Offsite)	D-B28-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0177	J	0.0177	0.0177	1	1	0.0177	0.0177
B28	Background (Offsite)	D-B28-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0291	J	0.0291	0.0291	1	0.1	0.00291	0.00291
B28	Background (Offsite)	D-B28-5.0-5.5	29-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00705	J	0.00705	0.00705	1	0.01	0.0000705	0.0000705
B28	Background (Offsite)	D-B28-5.0-5.5	29-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.0148	J	0.0148	0.0148	1	0.001	0.0000148	0.0000148
B28	Background (Offsite)	D-B28-5.0-5.5	29-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B28	Background (Offsite)	D-B28-5.0-5.5	29-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0158	J	0.0158	0.0158	1	0.1	0.00158	0.00158
B28	Background (Offsite)	D-B28-5.0-5.5			**BaP TEQ**									**0.02**	**0.02**
B28	Background (Offsite)	D-FD03-102919	29-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00596	J	0.00596	0.00596	1	0.1	0.000596	0.000596
B28	Background (Offsite)	D-FD03-102919	29-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00826	J	0.00826	0.00826	1	1	0.00826	0.00826
B28	Background (Offsite)	D-FD03-102919	29-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0119	J	0.0119	0.0119	1	0.1	0.00119	0.00119
B28	Background (Offsite)	D-FD03-102919	29-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00307	J	0.00307	0.00307	1	0.01	0.0000307	0.0000307
B28	Background (Offsite)	D-FD03-102919	29-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00764	J	0.00764	0.00764	1	0.001	0.00000764	0.00000764
B28	Background (Offsite)	D-FD03-102919	29-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B28	Background (Offsite)	D-FD03-102919	29-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00471	J	0.00471	0.00471	1	0.1	0.000471	0.000471
B28	Background (Offsite)	D-FD03-102919			**BaP TEQ**									**0.01**	**0.01**
B29	Background (Offsite)	D-B29-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.287		0.287	0.287	1	0.1	0.0287	0.0287
B29	Background (Offsite)	D-B29-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.392		0.392	0.392	1	1	0.392	0.392
B29	Background (Offsite)	D-B29-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.456		0.456	0.456	1	0.1	0.0456	0.0456
B29	Background (Offsite)	D-B29-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.142		0.142	0.142	1	0.01	0.00142	0.00142
B29	Background (Offsite)	D-B29-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.325		0.325	0.325	1	0.001	0.000325	0.000325
B29	Background (Offsite)	D-B29-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.045		0.045	0.045	1	1	0.045	0.045
B29	Background (Offsite)	D-B29-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.218		0.218	0.218	1	0.1	0.0218	0.0218
B29	Background (Offsite)	D-B29-0-102719			**BaP TEQ**									**0.53**	**0.53**
B29	Background (Offsite)	D-B29-10.0-10.5	07-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00596	J	0.00596	0.00596	1	0.1	0.000596	0.000596
B29	Background (Offsite)	D-B29-10.0-10.5	07-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00735	J	0.00735	0.00735	1	1	0.00735	0.00735
B29	Background (Offsite)	D-B29-10.0-10.5	07-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0102	J	0.0102	0.0102	1	0.1	0.00102	0.00102
B29	Background (Offsite)	D-B29-10.0-10.5	07-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00267	J	0.00267	0.00267	1	0.01	0.0000267	0.0000267
B29	Background (Offsite)	D-B29-10.0-10.5	07-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.00635	J	0.00635	0.00635	1	0.001	0.00000635	0.00000635
B29	Background (Offsite)	D-B29-10.0-10.5	07-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B29	Background (Offsite)	D-B29-10.0-10.5	07-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00507	J	0.00507	0.00507	1	0.1	0.000507	0.000507
B29	Background (Offsite)	D-B29-10.0-10.5			**BaP TEQ**									**0.01**	**0.01**
B29	Background (Offsite)	D-B29-5.0-5.5	07-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00661		0.00661	0.00661	1	0.1	0.000661	0.000661
B29	Background (Offsite)	D-B29-5.0-5.5	07-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00983		0.00983	0.00983	1	1	0.00983	0.00983
B29	Background (Offsite)	D-B29-5.0-5.5	07-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0122	J	0.0122	0.0122	1	0.1	0.00122	0.00122
B29	Background (Offsite)	D-B29-5.0-5.5	07-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00358		0.00358	0.00358	1	0.01	0.0000358	0.0000358

Attachment 7

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B29	Background (Offsite)	D-B29-5.0-5.5	07-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00777		0.00777	0.00777	1	0.001	0.00000777	0.00000777
B29	Background (Offsite)	D-B29-5.0-5.5	07-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B29	Background (Offsite)	D-B29-5.0-5.5	07-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00727		0.00727	0.00727	1	0.1	0.000727	0.000727
B29	Background (Offsite)	D-B29-5.0-5.5			**BaP TEQ**									**0.01**	**0.01**
B30	Background (Offsite)	D-B30-0-102719	28-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0235		0.0235	0.0235	1	0.1	0.00235	0.00235
B30	Background (Offsite)	D-B30-0-102719	28-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.035		0.035	0.035	1	1	0.035	0.035
B30	Background (Offsite)	D-B30-0-102719	28-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0644		0.0644	0.0644	1	0.1	0.00644	0.00644
B30	Background (Offsite)	D-B30-0-102719	28-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0192		0.0192	0.0192	1	0.01	0.000192	0.000192
B30	Background (Offsite)	D-B30-0-102719	28-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0335		0.0335	0.0335	1	0.001	0.0000335	0.0000335
B30	Background (Offsite)	D-B30-0-102719	28-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00334	U	0	0.00167	0	1	0.00167	0
B30	Background (Offsite)	D-B30-0-102719	28-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0175		0.0175	0.0175	1	0.1	0.00175	0.00175
B30	Background (Offsite)	D-B30-0-102719			**BaP TEQ**									**0.05**	**0.05**
B30	Background (Offsite)	D-B30-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0705		0.0705	0.0705	1	0.1	0.00705	0.00705
B30	Background (Offsite)	D-B30-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.115		0.115	0.115	1	1	0.115	0.115
B30	Background (Offsite)	D-B30-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.147		0.147	0.147	1	0.1	0.0147	0.0147
B30	Background (Offsite)	D-B30-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0405		0.0405	0.0405	1	0.01	0.000405	0.000405
B30	Background (Offsite)	D-B30-10.0-10.5	30-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.0867		0.0867	0.0867	1	0.001	0.0000867	0.0000867
B30	Background (Offsite)	D-B30-10.0-10.5	30-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00835	U	0	0.004175	0	1	0.004175	0
B30	Background (Offsite)	D-B30-10.0-10.5	30-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0795		0.0795	0.0795	1	0.1	0.00795	0.00795
B30	Background (Offsite)	D-B30-10.0-10.5			**BaP TEQ**									**0.15**	**0.15**
B30	Background (Offsite)	D-B30-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0376		0.0376	0.0376	1	0.1	0.00376	0.00376
B30	Background (Offsite)	D-B30-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0672		0.0672	0.0672	1	1	0.0672	0.0672
B30	Background (Offsite)	D-B30-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0795		0.0795	0.0795	1	0.1	0.00795	0.00795
B30	Background (Offsite)	D-B30-5.0-5.5	01-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0232		0.0232	0.0232	1	0.01	0.000232	0.000232
B30	Background (Offsite)	D-B30-5.0-5.5	01-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.0484		0.0484	0.0484	1	0.001	0.0000484	0.0000484
B30	Background (Offsite)	D-B30-5.0-5.5	01-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00833	U	0	0.004165	0	1	0.004165	0
B30	Background (Offsite)	D-B30-5.0-5.5	01-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0536		0.0536	0.0536	1	0.1	0.00536	0.00536
B30	Background (Offsite)	D-B30-5.0-5.5			**BaP TEQ**									**0.09**	**0.08**
B30	Background (Offsite)	D-FD01-110119	01-Nov-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0439		0.0439	0.0439	1	0.1	0.00439	0.00439
B30	Background (Offsite)	D-FD01-110119	01-Nov-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0719		0.0719	0.0719	1	1	0.0719	0.0719
B30	Background (Offsite)	D-FD01-110119	01-Nov-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.116		0.116	0.116	1	0.1	0.0116	0.0116
B30	Background (Offsite)	D-FD01-110119	01-Nov-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0307		0.0307	0.0307	1	0.01	0.000307	0.000307
B30	Background (Offsite)	D-FD01-110119	01-Nov-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.0631		0.0631	0.0631	1	0.001	0.0000631	0.0000631
B30	Background (Offsite)	D-FD01-110119	01-Nov-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00832	U	0	0.00416	0	1	0.00416	0
B30	Background (Offsite)	D-FD01-110119	01-Nov-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0441		0.0441	0.0441	1	0.1	0.00441	0.00441
B30	Background (Offsite)	D-FD01-110119			**BaP TEQ**									**0.10**	**0.09**
B31	Background (Offsite)	D-B31-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0182		0.0182	0.0182	1	0.1	0.00182	0.00182
B31	Background (Offsite)	D-B31-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0216		0.0216	0.0216	1	1	0.0216	0.0216
B31	Background (Offsite)	D-B31-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0355		0.0355	0.0355	1	0.1	0.00355	0.00355
B31	Background (Offsite)	D-B31-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0167	U	0	0.00835	0	0.01	0.0000835	0
B31	Background (Offsite)	D-B31-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0242		0.0242	0.0242	1	0.001	0.0000242	0.0000242
B31	Background (Offsite)	D-B31-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B31	Background (Offsite)	D-B31-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0167	U	0	0.00835	0	0.1	0.000835	0

Attachment 7

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B31	Background (Offsite)	D-B31-0-102719			**BaP TEQ**									**0.04**	**0.03**
B31	Background (Offsite)	D-B31-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B31	Background (Offsite)	D-B31-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B31	Background (Offsite)	D-B31-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B31	Background (Offsite)	D-B31-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B31	Background (Offsite)	D-B31-10.0-10.5	06-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B31	Background (Offsite)	D-B31-10.0-10.5	06-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B31	Background (Offsite)	D-B31-10.0-10.5	06-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B31	Background (Offsite)	D-B31-10.0-10.5			**BaP TEQ**									**0.002**	**0.00**
B31	Background (Offsite)	D-B31-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.115		0.115	0.115	1	0.1	0.0115	0.0115
B31	Background (Offsite)	D-B31-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.217		0.217	0.217	1	1	0.217	0.217
B31	Background (Offsite)	D-B31-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.274		0.274	0.274	1	0.1	0.0274	0.0274
B31	Background (Offsite)	D-B31-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.081		0.081	0.081	1	0.01	0.00081	0.00081
B31	Background (Offsite)	D-B31-5.0-5.5	28-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.149		0.149	0.149	1	0.001	0.000149	0.000149
B31	Background (Offsite)	D-B31-5.0-5.5	28-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B31	Background (Offsite)	D-B31-5.0-5.5	28-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0885		0.0885	0.0885	1	0.1	0.00885	0.00885
B31	Background (Offsite)	D-B31-5.0-5.5			**BaP TEQ**									**0.27**	**0.27**
B32	Background (Offsite)	D-B32-0-102719	30-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0233		0.0233	0.0233	1	0.1	0.00233	0.00233
B32	Background (Offsite)	D-B32-0-102719	30-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0319		0.0319	0.0319	1	1	0.0319	0.0319
B32	Background (Offsite)	D-B32-0-102719	30-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0581		0.0581	0.0581	1	0.1	0.00581	0.00581
B32	Background (Offsite)	D-B32-0-102719	30-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0167	U	0	0.00835	0	0.01	0.0000835	0
B32	Background (Offsite)	D-B32-0-102719	30-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0342		0.0342	0.0342	1	0.001	0.0000342	0.0000342
B32	Background (Offsite)	D-B32-0-102719	30-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B32	Background (Offsite)	D-B32-0-102719	30-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0258		0.0258	0.0258	1	0.1	0.00258	0.00258
B32	Background (Offsite)	D-B32-0-102719			**BaP TEQ**									**0.05**	**0.04**
B32	Background (Offsite)	D-B32-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0134		0.0134	0.0134	1	0.1	0.00134	0.00134
B32	Background (Offsite)	D-B32-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0192		0.0192	0.0192	1	1	0.0192	0.0192
B32	Background (Offsite)	D-B32-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0339		0.0339	0.0339	1	0.1	0.00339	0.00339
B32	Background (Offsite)	D-B32-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00799		0.00799	0.00799	1	0.01	0.0000799	0.0000799
B32	Background (Offsite)	D-B32-10.0-10.5	06-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.0176		0.0176	0.0176	1	0.001	0.0000176	0.0000176
B32	Background (Offsite)	D-B32-10.0-10.5	06-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00245		0.00245	0.00245	1	1	0.00245	0.00245
B32	Background (Offsite)	D-B32-10.0-10.5	06-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00987		0.00987	0.00987	1	0.1	0.000987	0.000987
B32	Background (Offsite)	D-B32-10.0-10.5			**BaP TEQ**									**0.03**	**0.03**
B32	Background (Offsite)	D-B32-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00468	J	0.00468	0.00468	1	0.1	0.000468	0.000468
B32	Background (Offsite)	D-B32-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00652	J	0.00652	0.00652	1	1	0.00652	0.00652
B32	Background (Offsite)	D-B32-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0113	J	0.0113	0.0113	1	0.1	0.00113	0.00113
B32	Background (Offsite)	D-B32-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00328	J	0.00328	0.00328	1	0.01	0.0000328	0.0000328
B32	Background (Offsite)	D-B32-5.0-5.5	28-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00657	J	0.00657	0.00657	1	0.001	0.00000657	0.00000657
B32	Background (Offsite)	D-B32-5.0-5.5	28-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B32	Background (Offsite)	D-B32-5.0-5.5	28-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00278	J	0.00278	0.00278	1	0.1	0.000278	0.000278
B32	Background (Offsite)	D-B32-5.0-5.5			**BaP TEQ**									**0.01**	**0.01**
B32	Background (Offsite)	B-FD02-102819	28-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00975	J	0.00975	0.00975	1	0.1	0.000975	0.000975
B32	Background (Offsite)	B-FD02-102819	28-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0176	J	0.0176	0.0176	1	1	0.0176	0.0176

Attachment 7

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B32	Background (Offsite)	B-FD02-102819	28-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.026	J	0.026	0.026	1	0.1	0.0026	0.0026
B32	Background (Offsite)	B-FD02-102819	28-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00721	J	0.00721	0.00721	1	0.01	0.0000721	0.0000721
B32	Background (Offsite)	B-FD02-102819	28-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.013	J	0.013	0.013	1	0.001	0.000013	0.000013
B32	Background (Offsite)	B-FD02-102819	28-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B32	Background (Offsite)	B-FD02-102819	28-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00772	J	0.00772	0.00772	1	0.1	0.000772	0.000772
B32	Background (Offsite)	B-FD02-102819			**BaP TEQ**									**0.02**	**0.02**
B33	Background (Offsite)	D-B33-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.00834	U	0	0.00417	0	0.1	0.000417	0
B33	Background (Offsite)	D-B33-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.00972		0.00972	0.00972	1	1	0.00972	0.00972
B33	Background (Offsite)	D-B33-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0184		0.0184	0.0184	1	0.1	0.00184	0.00184
B33	Background (Offsite)	D-B33-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00834	U	0	0.00417	0	0.01	0.0000417	0
B33	Background (Offsite)	D-B33-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0113		0.0113	0.0113	1	0.001	0.0000113	0.0000113
B33	Background (Offsite)	D-B33-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00834	U	0	0.00417	0	1	0.00417	0
B33	Background (Offsite)	D-B33-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00834	U	0	0.00417	0	0.1	0.000417	0
B33	Background (Offsite)	D-B33-0-102719			**BaP TEQ**									**0.02**	**0.01**
B33	Background (Offsite)	D-B33-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00986		0.00986	0.00986	1	0.1	0.000986	0.000986
B33	Background (Offsite)	D-B33-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0135		0.0135	0.0135	1	1	0.0135	0.0135
B33	Background (Offsite)	D-B33-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0286		0.0286	0.0286	1	0.1	0.00286	0.00286
B33	Background (Offsite)	D-B33-10.0-10.5	06-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00756		0.00756	0.00756	1	0.01	0.0000756	0.0000756
B33	Background (Offsite)	D-B33-10.0-10.5	06-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.0143		0.0143	0.0143	1	0.001	0.0000143	0.0000143
B33	Background (Offsite)	D-B33-10.0-10.5	06-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00253		0.00253	0.00253	1	1	0.00253	0.00253
B33	Background (Offsite)	D-B33-10.0-10.5	06-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00753		0.00753	0.00753	1	0.1	0.000753	0.000753
B33	Background (Offsite)	D-B33-10.0-10.5			**BaP TEQ**									**0.02**	**0.02**
B33	Background (Offsite)	D-B33-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0745		0.0745	0.0745	1	0.1	0.00745	0.00745
B33	Background (Offsite)	D-B33-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.112		0.112	0.112	1	1	0.112	0.112
B33	Background (Offsite)	D-B33-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.169		0.169	0.169	1	0.1	0.0169	0.0169
B33	Background (Offsite)	D-B33-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0575		0.0575	0.0575	1	0.01	0.000575	0.000575
B33	Background (Offsite)	D-B33-5.0-5.5	28-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.0967		0.0967	0.0967	1	0.001	0.0000967	0.0000967
B33	Background (Offsite)	D-B33-5.0-5.5	28-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00333	U	0	0.001665	0	1	0.001665	0
B33	Background (Offsite)	D-B33-5.0-5.5	28-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0461		0.0461	0.0461	1	0.1	0.00461	0.00461
B33	Background (Offsite)	D-B33-5.0-5.5			**BaP TEQ**									**0.14**	**0.14**
B34	Background (Offsite)	D-B34-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0335	J	0.0335	0.0335	1	0.1	0.00335	0.00335
B34	Background (Offsite)	D-B34-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0467	J	0.0467	0.0467	1	1	0.0467	0.0467
B34	Background (Offsite)	D-B34-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0888	J	0.0888	0.0888	1	0.1	0.00888	0.00888
B34	Background (Offsite)	D-B34-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0221	J	0.0221	0.0221	1	0.01	0.000221	0.000221
B34	Background (Offsite)	D-B34-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0504	J	0.0504	0.0504	1	0.001	0.0000504	0.0000504
B34	Background (Offsite)	D-B34-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B34	Background (Offsite)	D-B34-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0323	J	0.0323	0.0323	1	0.1	0.00323	0.00323
B34	Background (Offsite)	D-B34-0-102719			**BaP TEQ**									**0.07**	**0.06**
B34	Background (Offsite)	D-B34-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00405		0.00405	0.00405	1	0.1	0.000405	0.000405
B34	Background (Offsite)	D-B34-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00804		0.00804	0.00804	1	1	0.00804	0.00804
B34	Background (Offsite)	D-B34-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00966		0.00966	0.00966	1	0.1	0.000966	0.000966
B34	Background (Offsite)	D-B34-10.0-10.5	30-Oct-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00302		0.00302	0.00302	1	0.01	0.0000302	0.0000302
B34	Background (Offsite)	D-B34-10.0-10.5	30-Oct-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.00499		0.00499	0.00499	1	0.001	0.00000499	0.00000499

Attachment 7

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B34	Background (Offsite)	D-B34-10.0-10.5	30-Oct-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B34	Background (Offsite)	D-B34-10.0-10.5	30-Oct-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00452		0.00452	0.00452	1	0.1	0.000452	0.000452
B34	Background (Offsite)	D-B34-10.0-10.5			**BaP TEQ**									**0.01**	**0.01**
B34	Background (Offsite)	D-B34-5.0-5.5-102819	28-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B34	Background (Offsite)	D-B34-5.0-5.5-102819	28-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00228	J	0.00228	0.00228	1	1	0.00228	0.00228
B34	Background (Offsite)	D-B34-5.0-5.5-102819	28-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00419	J	0.00419	0.00419	1	0.1	0.000419	0.000419
B34	Background (Offsite)	D-B34-5.0-5.5-102819	28-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B34	Background (Offsite)	D-B34-5.0-5.5-102819	28-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.00191	J	0.00191	0.00191	1	0.001	0.00000191	0.00000191
B34	Background (Offsite)	D-B34-5.0-5.5-102819	28-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B34	Background (Offsite)	D-B34-5.0-5.5-102819	28-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B34	Background (Offsite)	D-B34-5.0-5.5-102819			**BaP TEQ**									**0.004**	**0.003**
B34	Background (Offsite)	D-FD01-102819	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	UJ	0	0.00083	0	0.1	0.000083	0
B34	Background (Offsite)	D-FD01-102819	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.00234	J	0.00234	0.00234	1	1	0.00234	0.00234
B34	Background (Offsite)	D-FD01-102819	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00385	J	0.00385	0.00385	1	0.1	0.000385	0.000385
B34	Background (Offsite)	D-FD01-102819	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	UJ	0	0.00083	0	0.01	0.0000083	0
B34	Background (Offsite)	D-FD01-102819	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0021	J	0.0021	0.0021	1	0.001	0.0000021	0.0000021
B34	Background (Offsite)	D-FD01-102819	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B34	Background (Offsite)	D-FD01-102819	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	UJ	0	0.00083	0	0.1	0.000083	0
B34	Background (Offsite)	D-FD01-102819			**BaP TEQ**									**0.004**	**0.003**
B35	Background (Offsite)	D-B35-0-102719	27-Oct-19	0-0	Benzo(a)anthracene	56-55-3	mg/kg	0.0211		0.0211	0.0211	1	0.1	0.00211	0.00211
B35	Background (Offsite)	D-B35-0-102719	27-Oct-19	0-0	Benzo(a)pyrene	50-32-8	mg/kg	0.0285		0.0285	0.0285	1	1	0.0285	0.0285
B35	Background (Offsite)	D-B35-0-102719	27-Oct-19	0-0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0541		0.0541	0.0541	1	0.1	0.00541	0.00541
B35	Background (Offsite)	D-B35-0-102719	27-Oct-19	0-0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0167	U	0	0.00835	0	0.01	0.0000835	0
B35	Background (Offsite)	D-B35-0-102719	27-Oct-19	0-0	Chrysene	218-01-9	mg/kg	0.0311		0.0311	0.0311	1	0.001	0.0000311	0.0000311
B35	Background (Offsite)	D-B35-0-102719	27-Oct-19	0-0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B35	Background (Offsite)	D-B35-0-102719	27-Oct-19	0-0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0191		0.0191	0.0191	1	0.1	0.00191	0.00191
B35	Background (Offsite)	D-B35-0-102719			**BaP TEQ**									**0.05**	**0.04**
B35	Background (Offsite)	D-B35-10.0-10.5	05-Nov-19	10.0-10.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0325		0.0325	0.0325	1	0.1	0.00325	0.00325
B35	Background (Offsite)	D-B35-10.0-10.5	05-Nov-19	10.0-10.5	Benzo(a)pyrene	50-32-8	mg/kg	0.064		0.064	0.064	1	1	0.064	0.064
B35	Background (Offsite)	D-B35-10.0-10.5	05-Nov-19	10.0-10.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0898		0.0898	0.0898	1	0.1	0.00898	0.00898
B35	Background (Offsite)	D-B35-10.0-10.5	05-Nov-19	10.0-10.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0255		0.0255	0.0255	1	0.01	0.000255	0.000255
B35	Background (Offsite)	D-B35-10.0-10.5	05-Nov-19	10.0-10.5	Chrysene	218-01-9	mg/kg	0.0474		0.0474	0.0474	1	0.001	0.0000474	0.0000474
B35	Background (Offsite)	D-B35-10.0-10.5	05-Nov-19	10.0-10.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B35	Background (Offsite)	D-B35-10.0-10.5	05-Nov-19	10.0-10.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.039		0.039	0.039	1	0.1	0.0039	0.0039
B35	Background (Offsite)	D-B35-10.0-10.5			**BaP TEQ**									**0.08**	**0.08**
B35	Background (Offsite)	D-B35-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0225		0.0225	0.0225	1	0.1	0.00225	0.00225
B35	Background (Offsite)	D-B35-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0385		0.0385	0.0385	1	1	0.0385	0.0385
B35	Background (Offsite)	D-B35-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0501	J	0.0501	0.0501	1	0.1	0.00501	0.00501
B35	Background (Offsite)	D-B35-5.0-5.5	28-Oct-19	5.0-5.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0167	U	0	0.00835	0	0.01	0.0000835	0
B35	Background (Offsite)	D-B35-5.0-5.5	28-Oct-19	5.0-5.5	Chrysene	218-01-9	mg/kg	0.0343	J	0.0343	0.0343	1	0.001	0.0000343	0.0000343
B35	Background (Offsite)	D-B35-5.0-5.5	28-Oct-19	5.0-5.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B35	Background (Offsite)	D-B35-5.0-5.5	28-Oct-19	5.0-5.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0346		0.0346	0.0346	1	0.1	0.00346	0.00346
B35	Background (Offsite)	D-B35-5.0-5.5			**BaP TEQ**									**0.06**	**0.05**

Attachment 7

Benzo(a)pyrene Toxicity Equivalent Calculations for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)

Notes:

BaP TEQ = Benzo(a)pyrene toxicity equivalent

U = nondetect

UJ = nondetect estimated

J = detect estimated concentration

RL = reporting limit

RPF = relative potency factor

Attachment 8

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B11	Onsite	D-B11-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0082		0.0082	0.0082	1	0.1	0.00082	0.00082
B11	Onsite	D-B11-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0126		0.0126	0.0126	1	1	0.0126	0.0126
B11	Onsite	D-B11-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0192		0.0192	0.0192	1	0.1	0.00192	0.00192
B11	Onsite	D-B11-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00639		0.00639	0.00639	1	0.01	0.0000639	0.0000639
B11	Onsite	D-B11-15.0-15.5	30-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.012		0.012	0.012	1	0.001	0.000012	0.000012
B11	Onsite	D-B11-15.0-15.5	30-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B11	Onsite	D-B11-15.0-15.5	30-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0105		0.0105	0.0105	1	0.1	0.00105	0.00105
B11	**Onsite**	**D-B11-15.0-15.5**			**BaP TEQ**									**0.02**	**0.02**
B11	Onsite	D-B11-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00982		0.00982	0.00982	1	0.1	0.000982	0.000982
B11	Onsite	D-B11-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0154		0.0154	0.0154	1	1	0.0154	0.0154
B11	Onsite	D-B11-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0205		0.0205	0.0205	1	0.1	0.00205	0.00205
B11	Onsite	D-B11-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00677		0.00677	0.00677	1	0.01	0.0000677	0.0000677
B11	Onsite	D-B11-19.5-20.0	30-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.0134		0.0134	0.0134	1	0.001	0.0000134	0.0000134
B11	Onsite	D-B11-19.5-20.0	30-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B11	Onsite	D-B11-19.5-20.0	30-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0114		0.0114	0.0114	1	0.1	0.00114	0.00114
B11	**Onsite**	**D-B11-19.5-20.0**			**BaP TEQ**									**0.02**	**0.02**
B12	Onsite	D-B12-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.091		0.091	0.091	1	0.1	0.0091	0.0091
B12	Onsite	D-B12-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.148		0.148	0.148	1	1	0.148	0.148
B12	Onsite	D-B12-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.172		0.172	0.172	1	0.1	0.0172	0.0172
B12	Onsite	D-B12-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0507		0.0507	0.0507	1	0.01	0.000507	0.000507
B12	Onsite	D-B12-15.0-15.5	31-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.111		0.111	0.111	1	0.001	0.000111	0.000111
B12	Onsite	D-B12-15.0-15.5	31-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B12	Onsite	D-B12-15.0-15.5	31-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.123		0.123	0.123	1	0.1	0.0123	0.0123
B12	**Onsite**	**D-B12-15.0-15.5**			**BaP TEQ**									**0.20**	**0.19**
B12	Onsite	D-B12-19.5-20	31-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.693		0.693	0.693	1	0.1	0.0693	0.0693
B12	Onsite	D-B12-19.5-20	31-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	1.38		1.38	1.38	1	1	1.38	1.38
B12	Onsite	D-B12-19.5-20	31-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	1.49		1.49	1.49	1	0.1	0.149	0.149
B12	Onsite	D-B12-19.5-20	31-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.453		0.453	0.453	1	0.01	0.00453	0.00453
B12	Onsite	D-B12-19.5-20	31-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.899		0.899	0.899	1	0.001	0.000899	0.000899
B12	Onsite	D-B12-19.5-20	31-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.165		0.165	0.165	1	1	0.165	0.165
B12	Onsite	D-B12-19.5-20	31-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.16		1.16	1.16	1	0.1	0.116	0.116
B12	**Onsite**	**D-B12-19.5-20**			**BaP TEQ**									**1.88**	**1.88**
B12	Onsite	D-B12-24.5-25.0	31-Oct-19	24.5-25.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0318		0.0318	0.0318	1	0.1	0.00318	0.00318
B12	Onsite	D-B12-24.5-25.0	31-Oct-19	24.5-25.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0675		0.0675	0.0675	1	1	0.0675	0.0675
B12	Onsite	D-B12-24.5-25.0	31-Oct-19	24.5-25.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0709		0.0709	0.0709	1	0.1	0.00709	0.00709
B12	Onsite	D-B12-24.5-25.0	31-Oct-19	24.5-25.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0187		0.0187	0.0187	1	0.01	0.000187	0.000187
B12	Onsite	D-B12-24.5-25.0	31-Oct-19	24.5-25.0	Chrysene	218-01-9	mg/kg	0.0416		0.0416	0.0416	1	0.001	0.0000416	0.0000416
B12	Onsite	D-B12-24.5-25.0	31-Oct-19	24.5-25.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B12	Onsite	D-B12-24.5-25.0	31-Oct-19	24.5-25.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0541		0.0541	0.0541	1	0.1	0.00541	0.00541

Attachment 8

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B12	**Onsite**	**D-B12-24.5-25.0**			**BaP TEQ**									**0.08**	**0.08**
B13	Onsite	D-B13-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.055	J	0.055	0.055	1	0.1	0.0055	0.0055
B13	Onsite	D-B13-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0817	J	0.0817	0.0817	1	1	0.0817	0.0817
B13	Onsite	D-B13-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0832	J	0.0832	0.0832	1	0.1	0.00832	0.00832
B13	Onsite	D-B13-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0268	J	0.0268	0.0268	1	0.01	0.000268	0.000268
B13	Onsite	D-B13-15.0-15.5	31-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.0607	J	0.0607	0.0607	1	0.001	0.0000607	0.0000607
B13	Onsite	D-B13-15.0-15.5	31-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00962	J	0.00962	0.00962	1	1	0.00962	0.00962
B13	Onsite	D-B13-15.0-15.5	31-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0589	J	0.0589	0.0589	1	0.1	0.00589	0.00589
B13	**Onsite**	**D-B13-15.0-15.5**			**BaP TEQ**									**0.11**	**0.11**
B13	Onsite	D-B13-19.5-20.0	31-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0355		0.0355	0.0355	1	0.1	0.00355	0.00355
B13	Onsite	D-B13-19.5-20.0	31-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0488		0.0488	0.0488	1	1	0.0488	0.0488
B13	Onsite	D-B13-19.5-20.0	31-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0504		0.0504	0.0504	1	0.1	0.00504	0.00504
B13	Onsite	D-B13-19.5-20.0	31-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0149		0.0149	0.0149	1	0.01	0.000149	0.000149
B13	Onsite	D-B13-19.5-20.0	31-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.038		0.038	0.038	1	0.001	0.000038	0.000038
B13	Onsite	D-B13-19.5-20.0	31-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B13	Onsite	D-B13-19.5-20.0	31-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0329		0.0329	0.0329	1	0.1	0.00329	0.00329
B13	**Onsite**	**D-B13-19.5-20.0**			**BaP TEQ**									**0.06**	**0.06**
B13	Onsite	D-FD01-103119	31-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.124	J	0.124	0.124	1	0.1	0.0124	0.0124
B13	Onsite	D-FD01-103119	31-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.184	J	0.184	0.184	1	1	0.184	0.184
B13	Onsite	D-FD01-103119	31-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.196	J	0.196	0.196	1	0.1	0.0196	0.0196
B13	Onsite	D-FD01-103119	31-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0654	J	0.0654	0.0654	1	0.01	0.000654	0.000654
B13	Onsite	D-FD01-103119	31-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.161	J	0.161	0.161	1	0.001	0.000161	0.000161
B13	Onsite	D-FD01-103119	31-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.025	J	0.025	0.025	1	1	0.025	0.025
B13	Onsite	D-FD01-103119	31-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.131	J	0.131	0.131	1	0.1	0.0131	0.0131
B13	**Onsite**	**D-FD01-103119**			**BaP TEQ**									**0.25**	**0.25**
B14	Onsite	D-B14-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0104		0.0104	0.0104	1	0.1	0.00104	0.00104
B14	Onsite	D-B14-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0123		0.0123	0.0123	1	1	0.0123	0.0123
B14	Onsite	D-B14-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0181		0.0181	0.0181	1	0.1	0.00181	0.00181
B14	Onsite	D-B14-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0048		0.0048	0.0048	1	0.01	0.000048	0.000048
B14	Onsite	D-B14-15.0-15.5	29-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.0101		0.0101	0.0101	1	0.001	0.0000101	0.0000101
B14	Onsite	D-B14-15.0-15.5	29-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B14	Onsite	D-B14-15.0-15.5	29-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0074		0.0074	0.0074	1	0.1	0.00074	0.00074
B14	**Onsite**	**D-B14-15.0-15.5**			**BaP TEQ**									**0.02**	**0.02**
B14	Onsite	D-B14-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00723		0.00723	0.00723	1	0.1	0.000723	0.000723
B14	Onsite	D-B14-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0107		0.0107	0.0107	1	1	0.0107	0.0107
B14	Onsite	D-B14-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0146		0.0146	0.0146	1	0.1	0.00146	0.00146
B14	Onsite	D-B14-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00468		0.00468	0.00468	1	0.01	0.0000468	0.0000468
B14	Onsite	D-B14-19.5-20.0	30-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.00799		0.00799	0.00799	1	0.001	0.00000799	0.00000799
B14	Onsite	D-B14-19.5-20.0	30-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0

Attachment 8

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B14	Onsite	D-B14-19.5-20.0	30-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00855		0.00855	0.00855	1	0.1	0.000855	0.000855
B14	**Onsite**	**D-B14-19.5-20.0**			**BaP TEQ**									**0.01**	**0.01**
B16	Onsite	D-B16-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0722	J	0.0722	0.0722	1	0.1	0.00722	0.00722
B16	Onsite	D-B16-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.13	J	0.13	0.13	1	1	0.13	0.13
B16	Onsite	D-B16-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.136	J	0.136	0.136	1	0.1	0.0136	0.0136
B16	Onsite	D-B16-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0417		0.0417	0.0417	1	0.01	0.000417	0.000417
B16	Onsite	D-B16-15.0-15.5	30-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.0877	J	0.0877	0.0877	1	0.001	0.0000877	0.0000877
B16	Onsite	D-B16-15.0-15.5	30-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B16	Onsite	D-B16-15.0-15.5	30-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0802	J	0.0802	0.0802	1	0.1	0.00802	0.00802
B16	**Onsite**	**D-B16-15.0-15.5**			**BaP TEQ**									**0.16**	**0.16**
B16	Onsite	D-B16-19.5-20.0	29-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0505		0.0505	0.0505	1	0.1	0.00505	0.00505
B16	Onsite	D-B16-19.5-20.0	29-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0851		0.0851	0.0851	1	1	0.0851	0.0851
B16	Onsite	D-B16-19.5-20.0	29-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.1		0.1	0.1	1	0.1	0.01	0.01
B16	Onsite	D-B16-19.5-20.0	29-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0245		0.0245	0.0245	1	0.01	0.000245	0.000245
B16	Onsite	D-B16-19.5-20.0	29-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.0589		0.0589	0.0589	1	0.001	0.0000589	0.0000589
B16	Onsite	D-B16-19.5-20.0	29-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B16	Onsite	D-B16-19.5-20.0	29-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0509		0.0509	0.0509	1	0.1	0.00509	0.00509
B16	**Onsite**	**D-B16-19.5-20.0**			**BaP TEQ**									**0.11**	**0.11**
B16	Onsite	D-FD02-102919	29-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0406	J	0.0406	0.0406	1	0.1	0.00406	0.00406
B16	Onsite	D-FD02-102919	29-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0676	J	0.0676	0.0676	1	1	0.0676	0.0676
B16	Onsite	D-FD02-102919	29-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0674	J	0.0674	0.0674	1	0.1	0.00674	0.00674
B16	Onsite	D-FD02-102919	29-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0269		0.0269	0.0269	1	0.01	0.000269	0.000269
B16	Onsite	D-FD02-102919	29-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.046	J	0.046	0.046	1	0.001	0.000046	0.000046
B16	Onsite	D-FD02-102919	29-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B16	Onsite	D-FD02-102919	29-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0401	J	0.0401	0.0401	1	0.1	0.00401	0.00401
B16	**Onsite**	**D-FD02-102919**			**BaP TEQ**									**0.08**	**0.08**
B17	Onsite	D-B17-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0191		0.0191	0.0191	1	0.1	0.00191	0.00191
B17	Onsite	D-B17-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0318		0.0318	0.0318	1	1	0.0318	0.0318
B17	Onsite	D-B17-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.033		0.033	0.033	1	0.1	0.0033	0.0033
B17	Onsite	D-B17-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0109		0.0109	0.0109	1	0.01	0.000109	0.000109
B17	Onsite	D-B17-15.0-15.5	30-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.022		0.022	0.022	1	0.001	0.000022	0.000022
B17	Onsite	D-B17-15.0-15.5	30-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B17	Onsite	D-B17-15.0-15.5	30-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0209		0.0209	0.0209	1	0.1	0.00209	0.00209
B17	**Onsite**	**D-B17-15.0-15.5**			**BaP TEQ**									**0.04**	**0.04**
B17	Onsite	D-B17-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00405		0.00405	0.00405	1	0.1	0.000405	0.000405
B17	Onsite	D-B17-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00705		0.00705	0.00705	1	1	0.00705	0.00705
B17	Onsite	D-B17-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00759		0.00759	0.00759	1	0.1	0.000759	0.000759
B17	Onsite	D-B17-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00238		0.00238	0.00238	1	0.01	0.0000238	0.0000238
B17	Onsite	D-B17-19.5-20.0	30-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.00454		0.00454	0.00454	1	0.001	0.00000454	0.00000454

Attachment 8

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B17	Onsite	D-B17-19.5-20.0	30-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B17	Onsite	D-B17-19.5-20.0	30-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00508		0.00508	0.00508	1	0.1	0.000508	0.000508
B17	**Onsite**	**D-B17-19.5-20.0**			**BaP TEQ**									**0.01**	**0.01**
B19	Onsite	D-B19-15.0-15.5	02-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0643		0.0643	0.0643	1	0.1	0.00643	0.00643
B19	Onsite	D-B19-15.0-15.5	02-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0937		0.0937	0.0937	1	1	0.0937	0.0937
B19	Onsite	D-B19-15.0-15.5	02-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.11		0.11	0.11	1	0.1	0.011	0.011
B19	Onsite	D-B19-15.0-15.5	02-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0322		0.0322	0.0322	1	0.01	0.000322	0.000322
B19	Onsite	D-B19-15.0-15.5	02-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.0725		0.0725	0.0725	1	0.001	0.0000725	0.0000725
B19	Onsite	D-B19-15.0-15.5	02-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B19	Onsite	D-B19-15.0-15.5	02-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0547		0.0547	0.0547	1	0.1	0.00547	0.00547
B19	**Onsite**	**D-B19-15.0-15.5**			**BaP TEQ**									**0.12**	**0.12**
B19	Onsite	D-B19-19.5-20.0	02-Nov-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.055		0.055	0.055	1	0.1	0.0055	0.0055
B19	Onsite	D-B19-19.5-20.0	02-Nov-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0947		0.0947	0.0947	1	1	0.0947	0.0947
B19	Onsite	D-B19-19.5-20.0	02-Nov-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.104		0.104	0.104	1	0.1	0.0104	0.0104
B19	Onsite	D-B19-19.5-20.0	02-Nov-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0357		0.0357	0.0357	1	0.01	0.000357	0.000357
B19	Onsite	D-B19-19.5-20.0	02-Nov-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.0666		0.0666	0.0666	1	0.001	0.0000666	0.0000666
B19	Onsite	D-B19-19.5-20.0	02-Nov-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B19	Onsite	D-B19-19.5-20.0	02-Nov-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0594		0.0594	0.0594	1	0.1	0.00594	0.00594
B19	**Onsite**	**D-B19-19.5-20.0**			**BaP TEQ**									**0.12**	**0.12**
B20	Onsite	D-B20-19.5-20.0	02-Nov-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00227		0.00227	0.00227	1	0.1	0.000227	0.000227
B20	Onsite	D-B20-19.5-20.0	02-Nov-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00367		0.00367	0.00367	1	1	0.00367	0.00367
B20	Onsite	D-B20-19.5-20.0	02-Nov-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00577		0.00577	0.00577	1	0.1	0.000577	0.000577
B20	Onsite	D-B20-19.5-20.0	02-Nov-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B20	Onsite	D-B20-19.5-20.0	02-Nov-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.00286		0.00286	0.00286	1	0.001	0.00000286	0.00000286
B20	Onsite	D-B20-19.5-20.0	02-Nov-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B20	Onsite	D-B20-19.5-20.0	02-Nov-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00233		0.00233	0.00233	1	0.1	0.000233	0.000233
B20	**Onsite**	**D-B20-19.5-20.0**			**BaP TEQ**									**0.01**	**0.00**
B21	Onsite	D-B21-15.0-15.5	01-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	1.52		1.52	1.52	1	0.1	0.152	0.152
B21	Onsite	D-B21-15.0-15.5	01-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	2.73		2.73	2.73	1	1	2.73	2.73
B21	Onsite	D-B21-15.0-15.5	01-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	3.04		3.04	3.04	1	0.1	0.304	0.304
B21	Onsite	D-B21-15.0-15.5	01-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.698		0.698	0.698	1	0.01	0.00698	0.00698
B21	Onsite	D-B21-15.0-15.5	01-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	1.89		1.89	1.89	1	0.001	0.00189	0.00189
B21	Onsite	D-B21-15.0-15.5	01-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0333	U	0	0.01665	0	1	0.01665	0
B21	Onsite	D-B21-15.0-15.5	01-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	1.88		1.88	1.88	1	0.1	0.188	0.188
B21	**Onsite**	**D-B21-15.0-15.5**			**BaP TEQ**									**3.40**	**3.38**
B21	Onsite	D-B21-19.5-20.0	01-Nov-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.156		0.156	0.156	1	0.1	0.0156	0.0156
B21	Onsite	D-B21-19.5-20.0	01-Nov-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.301		0.301	0.301	1	1	0.301	0.301
B21	Onsite	D-B21-19.5-20.0	01-Nov-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.327		0.327	0.327	1	0.1	0.0327	0.0327
B21	Onsite	D-B21-19.5-20.0	01-Nov-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0947		0.0947	0.0947	1	0.01	0.000947	0.000947

Attachment 8

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B21	Onsite	D-B21-19.5-20.0	01-Nov-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.193		0.193	0.193	1	0.001	0.000193	0.000193
B21	Onsite	D-B21-19.5-20.0	01-Nov-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B21	Onsite	D-B21-19.5-20.0	01-Nov-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.213		0.213	0.213	1	0.1	0.0213	0.0213
B21	**Onsite**	**D-B21-19.5-20.0**			**BaP TEQ**									**0.38**	**0.37**
B21	Onsite	D-B21-24.5-25.0	01-Nov-19	24.5-25.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0293		0.0293	0.0293	1	0.1	0.00293	0.00293
B21	Onsite	D-B21-24.5-25.0	01-Nov-19	24.5-25.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0544		0.0544	0.0544	1	1	0.0544	0.0544
B21	Onsite	D-B21-24.5-25.0	01-Nov-19	24.5-25.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0596		0.0596	0.0596	1	0.1	0.00596	0.00596
B21	Onsite	D-B21-24.5-25.0	01-Nov-19	24.5-25.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0209		0.0209	0.0209	1	0.01	0.000209	0.000209
B21	Onsite	D-B21-24.5-25.0	01-Nov-19	24.5-25.0	Chrysene	218-01-9	mg/kg	0.0357		0.0357	0.0357	1	0.001	0.0000357	0.0000357
B21	Onsite	D-B21-24.5-25.0	01-Nov-19	24.5-25.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B21	Onsite	D-B21-24.5-25.0	01-Nov-19	24.5-25.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0342		0.0342	0.0342	1	0.1	0.00342	0.00342
B21	**Onsite**	**D-B21-24.5-25.0**			**BaP TEQ**									**0.07**	**0.07**
B23	Onsite	D-B23-19.5-20.0	31-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B23	Onsite	D-B23-19.5-20.0	31-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00292		0.00292	0.00292	1	1	0.00292	0.00292
B23	Onsite	D-B23-19.5-20.0	31-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00319		0.00319	0.00319	1	0.1	0.000319	0.000319
B23	Onsite	D-B23-19.5-20.0	31-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B23	Onsite	D-B23-19.5-20.0	31-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.00176		0.00176	0.00176	1	0.001	0.00000176	0.00000176
B23	Onsite	D-B23-19.5-20.0	31-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B23	Onsite	D-B23-19.5-20.0	31-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00285		0.00285	0.00285	1	0.1	0.000285	0.000285
B23	**Onsite**	**D-B23-19.5-20.0**			**BaP TEQ**									**0.004**	**0.004**
B24	Onsite	D-B24-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.386		0.386	0.386	1	0.1	0.0386	0.0386
B24	Onsite	D-B24-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.877		0.877	0.877	1	1	0.877	0.877
B24	Onsite	D-B24-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.858		0.858	0.858	1	0.1	0.0858	0.0858
B24	Onsite	D-B24-15.0-15.5	30-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.247		0.247	0.247	1	0.01	0.00247	0.00247
B24	Onsite	D-B24-15.0-15.5	30-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.521		0.521	0.521	1	0.001	0.000521	0.000521
B24	Onsite	D-B24-15.0-15.5	30-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.0167	U	0	0.00835	0	1	0.00835	0
B24	Onsite	D-B24-15.0-15.5	30-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.538		0.538	0.538	1	0.1	0.0538	0.0538
B24	**Onsite**	**D-B24-15.0-15.5**			**BaP TEQ**									**1.07**	**1.06**
B24	Onsite	D-B24-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0411	J	0.0411	0.0411	1	0.1	0.00411	0.00411
B24	Onsite	D-B24-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0818	J	0.0818	0.0818	1	1	0.0818	0.0818
B24	Onsite	D-B24-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0813	J	0.0813	0.0813	1	0.1	0.00813	0.00813
B24	Onsite	D-B24-19.5-20.0	30-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0239	J	0.0239	0.0239	1	0.01	0.000239	0.000239
B24	Onsite	D-B24-19.5-20.0	30-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.0506	J	0.0506	0.0506	1	0.001	0.0000506	0.0000506
B24	Onsite	D-B24-19.5-20.0	30-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B24	Onsite	D-B24-19.5-20.0	30-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0649	J	0.0649	0.0649	1	0.1	0.00649	0.00649
B24	**Onsite**	**D-B24-19.5-20.0**			**BaP TEQ**									**0.10**	**0.10**
B24	Onsite	D-FD01-103019	30-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00975	J	0.00975	0.00975	1	0.1	0.000975	0.000975
B24	Onsite	D-FD01-103019	30-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0232	J	0.0232	0.0232	1	1	0.0232	0.0232
B24	Onsite	D-FD01-103019	30-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0237	J	0.0237	0.0237	1	0.1	0.00237	0.00237

Attachment 8

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B24	Onsite	D-FD01-103019	30-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00611	J	0.00611	0.00611	1	0.01	0.0000611	0.0000611
B24	Onsite	D-FD01-103019	30-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.0131	J	0.0131	0.0131	1	0.001	0.0000131	0.0000131
B24	Onsite	D-FD01-103019	30-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B24	Onsite	D-FD01-103019	30-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0202	J	0.0202	0.0202	1	0.1	0.00202	0.00202
B24	**Onsite**	**D-FD01-103019**			**BaP TEQ**									**0.03**	**0.03**
B25	Onsite	D-B25-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B25	Onsite	D-B25-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B25	Onsite	D-B25-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B25	Onsite	D-B25-15.0-15.5	31-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B25	Onsite	D-B25-15.0-15.5	31-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B25	Onsite	D-B25-15.0-15.5	31-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B25	Onsite	D-B25-15.0-15.5	31-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B25	**Onsite**	**D-B25-15.0-15.5**			**BaP TEQ**									**0.002**	**0.00**
B25	Onsite	D-B25-20.0-20.5	30-Oct-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00258		0.00258	0.00258	1	0.1	0.000258	0.000258
B25	Onsite	D-B25-20.0-20.5	30-Oct-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00369		0.00369	0.00369	1	1	0.00369	0.00369
B25	Onsite	D-B25-20.0-20.5	30-Oct-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00466		0.00466	0.00466	1	0.1	0.000466	0.000466
B25	Onsite	D-B25-20.0-20.5	30-Oct-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B25	Onsite	D-B25-20.0-20.5	30-Oct-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.00303		0.00303	0.00303	1	0.001	0.00000303	0.00000303
B25	Onsite	D-B25-20.0-20.5	30-Oct-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-B25-20.0-20.5	30-Oct-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00309		0.00309	0.00309	1	0.1	0.000309	0.000309
B25	**Onsite**	**D-B25-20.0-20.5**			**BaP TEQ**									**0.01**	**0.00**
B25	Onsite	D-B25-30.0-30.5	31-Oct-19	30.0-30.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B25	Onsite	D-B25-30.0-30.5	31-Oct-19	30.0-30.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-B25-30.0-30.5	31-Oct-19	30.0-30.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B25	Onsite	D-B25-30.0-30.5	31-Oct-19	30.0-30.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B25	Onsite	D-B25-30.0-30.5	31-Oct-19	30.0-30.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B25	Onsite	D-B25-30.0-30.5	31-Oct-19	30.0-30.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-B25-30.0-30.5	31-Oct-19	30.0-30.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B25	**Onsite**	**D-B25-30.0-30.5**			**BaP TEQ**									**0.002**	**0.00**
B25	Onsite	D-B25-40.0-40.5	31-Oct-19	40.0-40.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B25	Onsite	D-B25-40.0-40.5	31-Oct-19	40.0-40.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B25	Onsite	D-B25-40.0-40.5	31-Oct-19	40.0-40.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B25	Onsite	D-B25-40.0-40.5	31-Oct-19	40.0-40.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B25	Onsite	D-B25-40.0-40.5	31-Oct-19	40.0-40.5	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B25	Onsite	D-B25-40.0-40.5	31-Oct-19	40.0-40.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B25	Onsite	D-B25-40.0-40.5	31-Oct-19	40.0-40.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B25	**Onsite**	**D-B25-40.0-40.5**			**BaP TEQ**									**0.002**	**0.00**
B25	Onsite	D-FD04-103119	31-Oct-19	40.0-40.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B25	Onsite	D-FD04-103119	31-Oct-19	40.0-40.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-FD04-103119	31-Oct-19	40.0-40.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0

Attachment 8

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B25	Onsite	D-FD04-103119	31-Oct-19	40.0-40.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B25	Onsite	D-FD04-103119	31-Oct-19	40.0-40.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B25	Onsite	D-FD04-103119	31-Oct-19	40.0-40.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B25	Onsite	D-FD04-103119	31-Oct-19	40.0-40.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B25	**Onsite**	**D-FD04-103119**			**BaP TEQ**									**0.002**	**0.00**
B26	Onsite	D-B26-15.0-15.5	02-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B26	Onsite	D-B26-15.0-15.5	02-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B26	Onsite	D-B26-15.0-15.5	02-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B26	Onsite	D-B26-15.0-15.5	02-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B26	Onsite	D-B26-15.0-15.5	02-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B26	Onsite	D-B26-15.0-15.5	02-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B26	Onsite	D-B26-15.0-15.5	02-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B26	**Onsite**	**D-B26-15.0-15.5**			**BaP TEQ**									**0.002**	**0.00**
B26	Onsite	D-B26-20.0-20.5	02-Nov-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	Onsite	D-B26-20.0-20.5	02-Nov-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00268		0.00268	0.00268	1	1	0.00268	0.00268
B26	Onsite	D-B26-20.0-20.5	02-Nov-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00353		0.00353	0.00353	1	0.1	0.000353	0.000353
B26	Onsite	D-B26-20.0-20.5	02-Nov-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B26	Onsite	D-B26-20.0-20.5	02-Nov-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.00216		0.00216	0.00216	1	0.001	0.00000216	0.00000216
B26	Onsite	D-B26-20.0-20.5	02-Nov-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-20.0-20.5	02-Nov-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00252		0.00252	0.00252	1	0.1	0.000252	0.000252
B26	**Onsite**	**D-B26-20.0-20.5**			**BaP TEQ**									**0.004**	**0.003**
B26	Onsite	D-B26-25.0-25.5	02-Nov-19	25.0-25.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	Onsite	D-B26-25.0-25.5	02-Nov-19	25.0-25.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-25.0-25.5	02-Nov-19	25.0-25.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	Onsite	D-B26-25.0-25.5	02-Nov-19	25.0-25.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B26	Onsite	D-B26-25.0-25.5	02-Nov-19	25.0-25.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B26	Onsite	D-B26-25.0-25.5	02-Nov-19	25.0-25.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-25.0-25.5	02-Nov-19	25.0-25.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	**Onsite**	**D-B26-25.0-25.5**			**BaP TEQ**									**0.002**	**0.00**
B26	Onsite	D-B26-30.0-30.5	02-Nov-19	30.0-30.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B26	Onsite	D-B26-30.0-30.5	02-Nov-19	30.0-30.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B26	Onsite	D-B26-30.0-30.5	02-Nov-19	30.0-30.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B26	Onsite	D-B26-30.0-30.5	02-Nov-19	30.0-30.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B26	Onsite	D-B26-30.0-30.5	02-Nov-19	30.0-30.5	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B26	Onsite	D-B26-30.0-30.5	02-Nov-19	30.0-30.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B26	Onsite	D-B26-30.0-30.5	02-Nov-19	30.0-30.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B26	**Onsite**	**D-B26-30.0-30.5**			**BaP TEQ**									**0.002**	**0.00**
B26	Onsite	D-B26-40.0-40.5	02-Nov-19	40.0-40.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	Onsite	D-B26-40.0-40.5	02-Nov-19	40.0-40.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-40.0-40.5	02-Nov-19	40.0-40.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0

Attachment 8

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B26	Onsite	D-B26-40.0-40.5	02-Nov-19	40.0-40.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B26	Onsite	D-B26-40.0-40.5	02-Nov-19	40.0-40.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B26	Onsite	D-B26-40.0-40.5	02-Nov-19	40.0-40.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B26	Onsite	D-B26-40.0-40.5	02-Nov-19	40.0-40.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B26	**Onsite**	**D-B26-40.0-40.5**			**BaP TEQ**									**0.002**	**0.00**

Notes:

BaP TEQ = Benzo(a)pyrene toxicity equivalent

U = nondetect

UJ = nondetect estimated

J = detect estimated concentration

RL = reporting limit

RPF = relative potency factor

Attachment 9

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B18	Background (Offsite)	D-B18-15.0-15.5	05-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0139		0.0139	0.0139	1	0.1	0.00139	0.00139
B18	Background (Offsite)	D-B18-15.0-15.5	05-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0247		0.0247	0.0247	1	1	0.0247	0.0247
B18	Background (Offsite)	D-B18-15.0-15.5	05-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0324		0.0324	0.0324	1	0.1	0.00324	0.00324
B18	Background (Offsite)	D-B18-15.0-15.5	05-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0106		0.0106	0.0106	1	0.01	0.000106	0.000106
B18	Background (Offsite)	D-B18-15.0-15.5	05-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.0188		0.0188	0.0188	1	0.001	0.0000188	0.0000188
B18	Background (Offsite)	D-B18-15.0-15.5	05-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B18	Background (Offsite)	D-B18-15.0-15.5	05-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0163		0.0163	0.0163	1	0.1	0.00163	0.00163
B18	**Background (Offsite)**	**D-B18-15.0-15.5**			**BaP TEQ**									**0.03**	**0.03**
B22	Background (Offsite)	D-B22-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00361		0.00361	0.00361	1	0.1	0.000361	0.000361
B22	Background (Offsite)	D-B22-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00418		0.00418	0.00418	1	1	0.00418	0.00418
B22	Background (Offsite)	D-B22-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00699		0.00699	0.00699	1	0.1	0.000699	0.000699
B22	Background (Offsite)	D-B22-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00222		0.00222	0.00222	1	0.01	0.0000222	0.0000222
B22	Background (Offsite)	D-B22-15.0-15.5	29-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00456		0.00456	0.00456	1	0.001	0.00000456	0.00000456
B22	Background (Offsite)	D-B22-15.0-15.5	29-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B22	Background (Offsite)	D-B22-15.0-15.5	29-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00238		0.00238	0.00238	1	0.1	0.000238	0.000238
B22	**Background (Offsite)**	**D-B22-15.0-15.5**			**BaP TEQ**									**0.01**	**0.01**
B27	Background (Offsite)	D-B27-15.0-15.5	03-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-15.0-15.5	03-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-15.0-15.5	03-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-15.0-15.5	03-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-B27-15.0-15.5	03-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-B27-15.0-15.5	03-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-15.0-15.5	03-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	**Background (Offsite)**	**D-B27-15.0-15.5**			**BaP TEQ**									**0.002**	**0.00**
B27	Background (Offsite)	D-B27-20.0-20.5	03-Nov-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B27	Background (Offsite)	D-B27-20.0-20.5	03-Nov-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B27	Background (Offsite)	D-B27-20.0-20.5	03-Nov-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B27	Background (Offsite)	D-B27-20.0-20.5	03-Nov-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B27	Background (Offsite)	D-B27-20.0-20.5	03-Nov-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B27	Background (Offsite)	D-B27-20.0-20.5	03-Nov-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B27	Background (Offsite)	D-B27-20.0-20.5	03-Nov-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B27	**Background (Offsite)**	**D-B27-20.0-20.5**			**BaP TEQ**									**0.002**	**0.00**
B27	Background (Offsite)	D-B27-25.0-25.5	02-Nov-19	25.0-25.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-25.0-25.5	02-Nov-19	25.0-25.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-25.0-25.5	02-Nov-19	25.0-25.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-25.0-25.5	02-Nov-19	25.0-25.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-B27-25.0-25.5	02-Nov-19	25.0-25.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-B27-25.0-25.5	02-Nov-19	25.0-25.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-25.0-25.5	02-Nov-19	25.0-25.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	**Background (Offsite)**	**D-B27-25.0-25.5**			**BaP TEQ**									**0.002**	**0.00**

Attachment 9

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B27	Background (Offsite)	D-B27-30.0-30.5	04-Nov-19	30.0-30.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-30.0-30.5	04-Nov-19	30.0-30.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-30.0-30.5	04-Nov-19	30.0-30.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-30.0-30.5	04-Nov-19	30.0-30.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-B27-30.0-30.5	04-Nov-19	30.0-30.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-B27-30.0-30.5	04-Nov-19	30.0-30.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-30.0-30.5	04-Nov-19	30.0-30.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	**Background (Offsite)**	**D-B27-30.0-30.5**			**BaP TEQ**									**0.002**	**0.00**
B27	Background (Offsite)	D-B27-40.0-40.5	04-Nov-19	40.0-40.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-40.0-40.5	04-Nov-19	40.0-40.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-40.0-40.5	04-Nov-19	40.0-40.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-B27-40.0-40.5	04-Nov-19	40.0-40.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-B27-40.0-40.5	04-Nov-19	40.0-40.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-B27-40.0-40.5	04-Nov-19	40.0-40.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-B27-40.0-40.5	04-Nov-19	40.0-40.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	**Background (Offsite)**	**D-B27-40.0-40.5**			**BaP TEQ**									**0.002**	**0.00**
B27	Background (Offsite)	D-FD01-110219	02-Nov-19	30.0-30.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-FD01-110219	02-Nov-19	30.0-30.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-FD01-110219	02-Nov-19	30.0-30.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-FD01-110219	02-Nov-19	30.0-30.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-FD01-110219	02-Nov-19	30.0-30.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-FD01-110219	02-Nov-19	30.0-30.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-FD01-110219	02-Nov-19	30.0-30.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	**Background (Offsite)**	**D-FD01-110219**			**BaP TEQ**									**0.002**	**0.00**
B27	Background (Offsite)	D-FD02-110319	03-Nov-19	25.0-25.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B27	Background (Offsite)	D-FD02-110319	03-Nov-19	25.0-25.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00198		0.00198	0.00198	1	1	0.00198	0.00198
B27	Background (Offsite)	D-FD02-110319	03-Nov-19	25.0-25.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00204		0.00204	0.00204	1	0.1	0.000204	0.000204
B27	Background (Offsite)	D-FD02-110319	03-Nov-19	25.0-25.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B27	Background (Offsite)	D-FD02-110319	03-Nov-19	25.0-25.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B27	Background (Offsite)	D-FD02-110319	03-Nov-19	25.0-25.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B27	Background (Offsite)	D-FD02-110319	03-Nov-19	25.0-25.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00178		0.00178	0.00178	1	0.1	0.000178	0.000178
B27	**Background (Offsite)**	**D-FD02-110319**			**BaP TEQ**									**0.003**	**0.002**
B28	Background (Offsite)	D-B28-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B28	Background (Offsite)	D-B28-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B28	Background (Offsite)	D-B28-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00201		0.00201	0.00201	1	0.1	0.000201	0.000201
B28	Background (Offsite)	D-B28-15.0-15.5	29-Oct-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B28	Background (Offsite)	D-B28-15.0-15.5	29-Oct-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B28	Background (Offsite)	D-B28-15.0-15.5	29-Oct-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B28	Background (Offsite)	D-B28-15.0-15.5	29-Oct-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B28	**Background (Offsite)**	**D-B28-15.0-15.5**			**BaP TEQ**									**0.002**	**0.0002**

Attachment 9
Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Background (Offsite)
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B28	Background (Offsite)	D-B28-19.5-20.0	29-Oct-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B28	Background (Offsite)	D-B28-19.5-20.0	29-Oct-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B28	Background (Offsite)	D-B28-19.5-20.0	29-Oct-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B28	Background (Offsite)	D-B28-19.5-20.0	29-Oct-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B28	Background (Offsite)	D-B28-19.5-20.0	29-Oct-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B28	Background (Offsite)	D-B28-19.5-20.0	29-Oct-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B28	Background (Offsite)	D-B28-19.5-20.0	29-Oct-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B28	**Background (Offsite)**	**D-B28-19.5-20.0**			**BaP TEQ**									**0.002**	**0.00**
B29	Background (Offsite)	D-B29-15.0-15.5	07-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0376	J	0.0376	0.0376	1	0.1	0.00376	0.00376
B29	Background (Offsite)	D-B29-15.0-15.5	07-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0772	J	0.0772	0.0772	1	1	0.0772	0.0772
B29	Background (Offsite)	D-B29-15.0-15.5	07-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0766	J	0.0766	0.0766	1	0.1	0.00766	0.00766
B29	Background (Offsite)	D-B29-15.0-15.5	07-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0253	J	0.0253	0.0253	1	0.01	0.000253	0.000253
B29	Background (Offsite)	D-B29-15.0-15.5	07-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.046	J	0.046	0.046	1	0.001	0.000046	0.000046
B29	Background (Offsite)	D-B29-15.0-15.5	07-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B29	Background (Offsite)	D-B29-15.0-15.5	07-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.062	J	0.062	0.062	1	0.1	0.0062	0.0062
B29	**Background (Offsite)**	**D-B29-15.0-15.5**			**BaP TEQ**									**0.10**	**0.10**
B29	Background (Offsite)	D-B29-20.0-20.5	07-Nov-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.012	J	0.012	0.012	1	0.1	0.0012	0.0012
B29	Background (Offsite)	D-B29-20.0-20.5	07-Nov-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.022	J	0.022	0.022	1	1	0.022	0.022
B29	Background (Offsite)	D-B29-20.0-20.5	07-Nov-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0257	J	0.0257	0.0257	1	0.1	0.00257	0.00257
B29	Background (Offsite)	D-B29-20.0-20.5	07-Nov-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00794	J	0.00794	0.00794	1	0.01	0.0000794	0.0000794
B29	Background (Offsite)	D-B29-20.0-20.5	07-Nov-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.0143	J	0.0143	0.0143	1	0.001	0.0000143	0.0000143
B29	Background (Offsite)	D-B29-20.0-20.5	07-Nov-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B29	Background (Offsite)	D-B29-20.0-20.5	07-Nov-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0128	J	0.0128	0.0128	1	0.1	0.00128	0.00128
B29	**Background (Offsite)**	**D-B29-20.0-20.5**			**BaP TEQ**									**0.03**	**0.03**
B30	Background (Offsite)	D-B30-15.0-15.5	01-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.0168		0.0168	0.0168	1	0.1	0.00168	0.00168
B30	Background (Offsite)	D-B30-15.0-15.5	01-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.029		0.029	0.029	1	1	0.029	0.029
B30	Background (Offsite)	D-B30-15.0-15.5	01-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0372		0.0372	0.0372	1	0.1	0.00372	0.00372
B30	Background (Offsite)	D-B30-15.0-15.5	01-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0109		0.0109	0.0109	1	0.01	0.000109	0.000109
B30	Background (Offsite)	D-B30-15.0-15.5	01-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.0218		0.0218	0.0218	1	0.001	0.0000218	0.0000218
B30	Background (Offsite)	D-B30-15.0-15.5	01-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B30	Background (Offsite)	D-B30-15.0-15.5	01-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0217		0.0217	0.0217	1	0.1	0.00217	0.00217
B30	**Background (Offsite)**	**D-B30-15.0-15.5**			**BaP TEQ**									**0.04**	**0.04**
B30	Background (Offsite)	D-B30-19.5-20.0	01-Nov-19	19.5-20.0	Benzo(a)anthracene	56-55-3	mg/kg	0.0246		0.0246	0.0246	1	0.1	0.00246	0.00246
B30	Background (Offsite)	D-B30-19.5-20.0	01-Nov-19	19.5-20.0	Benzo(a)pyrene	50-32-8	mg/kg	0.0424		0.0424	0.0424	1	1	0.0424	0.0424
B30	Background (Offsite)	D-B30-19.5-20.0	01-Nov-19	19.5-20.0	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0558		0.0558	0.0558	1	0.1	0.00558	0.00558
B30	Background (Offsite)	D-B30-19.5-20.0	01-Nov-19	19.5-20.0	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0135		0.0135	0.0135	1	0.01	0.000135	0.000135
B30	Background (Offsite)	D-B30-19.5-20.0	01-Nov-19	19.5-20.0	Chrysene	218-01-9	mg/kg	0.0327		0.0327	0.0327	1	0.001	0.0000327	0.0000327
B30	Background (Offsite)	D-B30-19.5-20.0	01-Nov-19	19.5-20.0	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B30	Background (Offsite)	D-B30-19.5-20.0	01-Nov-19	19.5-20.0	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0297		0.0297	0.0297	1	0.1	0.00297	0.00297
B30	**Background (Offsite)**	**D-B30-19.5-20.0**			**BaP TEQ**									**0.05**	**0.05**

Attachment 9
Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Background (Offsite)
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B31	Background (Offsite)	D-B31-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B31	Background (Offsite)	D-B31-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B31	Background (Offsite)	D-B31-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00241		0.00241	0.00241	1	0.1	0.000241	0.000241
B31	Background (Offsite)	D-B31-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B31	Background (Offsite)	D-B31-15.0-15.5	06-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B31	Background (Offsite)	D-B31-15.0-15.5	06-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B31	Background (Offsite)	D-B31-15.0-15.5	06-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B31	**Background (Offsite)**	**D-B31-15.0-15.5**			**BaP TEQ**									**0.002**	**0.0002**
B31	Background (Offsite)	D-B31-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B31	Background (Offsite)	D-B31-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B31	Background (Offsite)	D-B31-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B31	Background (Offsite)	D-B31-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00166	U	0	0.00083	0	0.01	0.0000083	0
B31	Background (Offsite)	D-B31-20.0-20.5	06-Nov-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.00166	U	0	0.00083	0	0.001	0.00000083	0
B31	Background (Offsite)	D-B31-20.0-20.5	06-Nov-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B31	Background (Offsite)	D-B31-20.0-20.5	06-Nov-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00166	U	0	0.00083	0	0.1	0.000083	0
B31	**Background (Offsite)**	**D-B31-20.0-20.5**			**BaP TEQ**									**0.002**	**0.00**
B32	Background (Offsite)	D-B32-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B32	Background (Offsite)	D-B32-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B32	Background (Offsite)	D-B32-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B32	Background (Offsite)	D-B32-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B32	Background (Offsite)	D-B32-15.0-15.5	06-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B32	Background (Offsite)	D-B32-15.0-15.5	06-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B32	Background (Offsite)	D-B32-15.0-15.5	06-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B32	**Background (Offsite)**	**D-B32-15.0-15.5**			**BaP TEQ**									**0.002**	**0.00**
B32	Background (Offsite)	D-B32-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B32	Background (Offsite)	D-B32-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B32	Background (Offsite)	D-B32-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B32	Background (Offsite)	D-B32-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B32	Background (Offsite)	D-B32-20.0-20.5	06-Nov-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B32	Background (Offsite)	D-B32-20.0-20.5	06-Nov-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B32	Background (Offsite)	D-B32-20.0-20.5	06-Nov-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B32	**Background (Offsite)**	**D-B32-20.0-20.5**			**BaP TEQ**									**0.002**	**0.00**
B33	Background (Offsite)	D-B33-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B33	Background (Offsite)	D-B33-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B33	Background (Offsite)	D-B33-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00198		0.00198	0.00198	1	0.1	0.000198	0.000198
B33	Background (Offsite)	D-B33-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B33	Background (Offsite)	D-B33-15.0-15.5	06-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B33	Background (Offsite)	D-B33-15.0-15.5	06-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B33	Background (Offsite)	D-B33-15.0-15.5	06-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B33	**Background (Offsite)**	**D-B33-15.0-15.5**			**BaP TEQ**									**0.002**	**0.0002**

Attachment 9
Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Background (Offsite)
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)
B33	Background (Offsite)	D-B33-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00178		0.00178	0.00178	1	0.1	0.000178	0.000178
B33	Background (Offsite)	D-B33-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00274		0.00274	0.00274	1	1	0.00274	0.00274
B33	Background (Offsite)	D-B33-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00552		0.00552	0.00552	1	0.1	0.000552	0.000552
B33	Background (Offsite)	D-B33-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00176		0.00176	0.00176	1	0.01	0.0000176	0.0000176
B33	Background (Offsite)	D-B33-20.0-20.5	06-Nov-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.00425		0.00425	0.00425	1	0.001	0.00000425	0.00000425
B33	Background (Offsite)	D-B33-20.0-20.5	06-Nov-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B33	Background (Offsite)	D-B33-20.0-20.5	06-Nov-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00175		0.00175	0.00175	1	0.1	0.000175	0.000175
B33	**Background (Offsite)**	**D-B33-20.0-20.5**			**BaP TEQ**									**0.005**	**0.004**
B34	Background (Offsite)	D-B34-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00634		0.00634	0.00634	1	0.1	0.000634	0.000634
B34	Background (Offsite)	D-B34-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0109		0.0109	0.0109	1	1	0.0109	0.0109
B34	Background (Offsite)	D-B34-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0142		0.0142	0.0142	1	0.1	0.00142	0.00142
B34	Background (Offsite)	D-B34-15.0-15.5	06-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00443		0.00443	0.00443	1	0.01	0.0000443	0.0000443
B34	Background (Offsite)	D-B34-15.0-15.5	06-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00809		0.00809	0.00809	1	0.001	0.00000809	0.00000809
B34	Background (Offsite)	D-B34-15.0-15.5	06-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00166	U	0	0.00083	0	1	0.00083	0
B34	Background (Offsite)	D-B34-15.0-15.5	06-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00593		0.00593	0.00593	1	0.1	0.000593	0.000593
B34	**Background (Offsite)**	**D-B34-15.0-15.5**			**BaP TEQ**									**0.01**	**0.01**
B34	Background (Offsite)	D-B34-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B34	Background (Offsite)	D-B34-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B34	Background (Offsite)	D-B34-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B34	Background (Offsite)	D-B34-20.0-20.5	06-Nov-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00167	U	0	0.000835	0	0.01	0.00000835	0
B34	Background (Offsite)	D-B34-20.0-20.5	06-Nov-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.00167	U	0	0.000835	0	0.001	0.000000835	0
B34	Background (Offsite)	D-B34-20.0-20.5	06-Nov-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B34	Background (Offsite)	D-B34-20.0-20.5	06-Nov-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00167	U	0	0.000835	0	0.1	0.0000835	0
B34	**Background (Offsite)**	**D-B34-20.0-20.5**			**BaP TEQ**									**0.002**	**0.00**
B35	Background (Offsite)	D-B35-15.0-15.5	05-Nov-19	15.0-15.5	Benzo(a)anthracene	56-55-3	mg/kg	0.00266		0.00266	0.00266	1	0.1	0.000266	0.000266
B35	Background (Offsite)	D-B35-15.0-15.5	05-Nov-19	15.0-15.5	Benzo(a)pyrene	50-32-8	mg/kg	0.00431		0.00431	0.00431	1	1	0.00431	0.00431
B35	Background (Offsite)	D-B35-15.0-15.5	05-Nov-19	15.0-15.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00604		0.00604	0.00604	1	0.1	0.000604	0.000604
B35	Background (Offsite)	D-B35-15.0-15.5	05-Nov-19	15.0-15.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00187		0.00187	0.00187	1	0.01	0.0000187	0.0000187
B35	Background (Offsite)	D-B35-15.0-15.5	05-Nov-19	15.0-15.5	Chrysene	218-01-9	mg/kg	0.00352		0.00352	0.00352	1	0.001	0.00000352	0.00000352
B35	Background (Offsite)	D-B35-15.0-15.5	05-Nov-19	15.0-15.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B35	Background (Offsite)	D-B35-15.0-15.5	05-Nov-19	15.0-15.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.00395		0.00395	0.00395	1	0.1	0.000395	0.000395
B35	**Background (Offsite)**	**D-B35-15.0-15.5**			**BaP TEQ**									**0.01**	**0.01**
B35	Background (Offsite)	D-B35-20.0-20.5	05-Nov-19	20.0-20.5	Benzo(a)anthracene	56-55-3	mg/kg	0.044		0.044	0.044	1	0.1	0.0044	0.0044
B35	Background (Offsite)	D-B35-20.0-20.5	05-Nov-19	20.0-20.5	Benzo(a)pyrene	50-32-8	mg/kg	0.0882		0.0882	0.0882	1	1	0.0882	0.0882
B35	Background (Offsite)	D-B35-20.0-20.5	05-Nov-19	20.0-20.5	Benzo(b)fluoranthene	205-99-2	mg/kg	0.117		0.117	0.117	1	0.1	0.0117	0.0117
B35	Background (Offsite)	D-B35-20.0-20.5	05-Nov-19	20.0-20.5	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0313		0.0313	0.0313	1	0.01	0.000313	0.000313
B35	Background (Offsite)	D-B35-20.0-20.5	05-Nov-19	20.0-20.5	Chrysene	218-01-9	mg/kg	0.0629		0.0629	0.0629	1	0.001	0.0000629	0.0000629
B35	Background (Offsite)	D-B35-20.0-20.5	05-Nov-19	20.0-20.5	Dibenz(a,h)anthracene	53-70-3	mg/kg	0.00167	U	0	0.000835	0	1	0.000835	0
B35	Background (Offsite)	D-B35-20.0-20.5	05-Nov-19	20.0-20.5	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0579		0.0579	0.0579	1	0.1	0.00579	0.00579
B35	**Background (Offsite)**	**D-B35-20.0-20.5**			**BaP TEQ**									**0.11**	**0.11**

Attachment 9

Benzo(a)pyrene Toxicity Equivalent Calculations for Deep Soil (>15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample Location	Area	Sample ID	Sample Date	Top Depth	Analyte	CAS#	Units	Results (mg/kg)	Flag	Result [U/UJ=0] (mg/kg)	Result [U/UJ=1/2RL] (mg/kg)	Detect	RPF	BAP TEQ [U/UJ=1/2RL] (mg/kg)	BAP TEQ [U/UJ=0] (mg/kg)

Notes:

BaP TEQ = Benzo(a)pyrene toxicity equivalent

U = nondetect

UJ = nondetect estimated

J = detect estimated concentration

RL = reporting limit

RPF = relative potency factor

Attachment 10

ProUCL Outputs for Surface and Subsurface Soil (0-15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.112/4/2019 5:06:56 PM
From File	ProUCL_Input_Soil_0-15_Onsite.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Total Number of Observations	73	Number of Distinct Observations	63
		Number of Missing Observations	0
Minimum	7.38	Mean	17.22
Maximum	50.3	Median	15.4
SD	7.679	Std. Error of Mean	0.899
Coefficient of Variation	0.446	Skewness	1.949

Normal GOF Test

Shapiro Wilk Test Statistic	0.839	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	7.630E-11	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.106	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.104	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.72	95% Adjusted-CLT UCL (Chen-1995)	18.92
		95% Modified-t UCL (Johnson-1978)	18.75

Gamma GOF Test

A-D Test Statistic	0.742	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.753	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0659	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.105	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	6.352	k star (bias corrected MLE)	6.1
Theta hat (MLE)	2.711	Theta star (bias corrected MLE)	2.823
nu hat (MLE)	927.4	nu star (bias corrected)	890.6
MLE Mean (bias corrected)	17.22	MLE Sd (bias corrected)	6.972
		Approximate Chi Square Value (0.05)	822.3
Adjusted Level of Significance	0.0467	Adjusted Chi Square Value	821

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	18.65	95% Adjusted Gamma UCL (use when n<50)	18.68

55	**Lognormal GOF Test**											
56					Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk Lognormal GOF Test**					
57					5% Shapiro Wilk P Value	0.142	Data appear Lognormal at 5% Significance Level					
58					Lilliefors Test Statistic	0.0674	**Lilliefors Lognormal GOF Test**					
59					5% Lilliefors Critical Value	0.104	Data appear Lognormal at 5% Significance Level					
60	**Data appear Lognormal at 5% Significance Level**											
61												
62	**Lognormal Statistics**											
63					Minimum of Logged Data	1.999	Mean of logged Data	2.765				
64					Maximum of Logged Data	3.918	SD of logged Data	0.395				
65												
66	**Assuming Lognormal Distribution**											
67					95% H-UCL	18.67	90% Chebyshev (MVUE) UCL	19.61				
68					95% Chebyshev (MVUE) UCL	20.72	97.5% Chebyshev (MVUE) UCL	22.27				
69					99% Chebyshev (MVUE) UCL	25.31						
70												
71	**Nonparametric Distribution Free UCL Statistics**											
72	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
73												
74	**Nonparametric Distribution Free UCLs**											
75					95% CLT UCL	18.7	95% Jackknife UCL	18.72				
76					95% Standard Bootstrap UCL	18.7	95% Bootstrap-t UCL	18.97				
77					95% Hall's Bootstrap UCL	19.14	95% Percentile Bootstrap UCL	18.75				
78					95% BCA Bootstrap UCL	19.02						
79					90% Chebyshev(Mean, Sd) UCL	19.92	95% Chebyshev(Mean, Sd) UCL	21.14				
80					97.5% Chebyshev(Mean, Sd) UCL	22.83	99% Chebyshev(Mean, Sd) UCL	26.16				
81												
82	**Suggested UCL to Use**											
83					95% Approximate Gamma UCL	18.65						
84												
85	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
86	Recommendations are based upon data size, data distribution, and skewness.											
87	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
88	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
89												
90	**Benzo[a]anthracene**											
91												
92	**General Statistics**											
93					Total Number of Observations	73	Number of Distinct Observations	69				
94					Number of Detects	66	Number of Non-Detects	7				
95					Number of Distinct Detects	65	Number of Distinct Non-Detects	4				
96					Minimum Detect	0.00177	Minimum Non-Detect	0.00167				
97					Maximum Detect	17.5	Maximum Non-Detect	0.00834				
98					Variance Detects	6.633	Percent Non-Detects	9.589%				
99					Mean Detects	0.963	SD Detects	2.576				
100					Median Detects	0.132	CV Detects	2.675				
101					Skewness Detects	4.837	Kurtosis Detects	27.25				
102					Mean of Logged Detects	-2.139	SD of Logged Detects	2.304				
103												
104	**Normal GOF Test on Detects Only**											
105					Shapiro Wilk Test Statistic	0.419	**Normal GOF Test on Detected Observations Only**					
106					5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level					
107					Lilliefors Test Statistic	0.355	**Lilliefors GOF Test**					
108					5% Lilliefors Critical Value	0.109	Detected Data Not Normal at 5% Significance Level					

109	**Detected Data Not Normal at 5% Significance Level**											
110												
111	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
112					KM Mean	0.871			KM Standard Error of Mean	0.289		
113					KM SD	2.447			95% KM (BCA) UCL	1.431		
114					95% KM (t) UCL	1.351			95% KM (Percentile Bootstrap) UCL	1.369		
115					95% KM (z) UCL	1.345			95% KM Bootstrap t UCL	1.902		
116					90% KM Chebyshev UCL	1.736			95% KM Chebyshev UCL	2.128		
117					97.5% KM Chebyshev UCL	2.673			99% KM Chebyshev UCL	3.742		
118												
119	**Gamma GOF Tests on Detected Observations Only**											
120					A-D Test Statistic	2.092			**Anderson-Darling GOF Test**			
121					5% A-D Critical Value	0.859			Detected Data Not Gamma Distributed at 5% Significance Level			
122					K-S Test Statistic	0.143			**Kolmogorov-Smirnov GOF**			
123					5% K-S Critical Value	0.119			Detected Data Not Gamma Distributed at 5% Significance Level			
124	**Detected Data Not Gamma Distributed at 5% Significance Level**											
125												
126	**Gamma Statistics on Detected Data Only**											
127					k hat (MLE)	0.324			k star (bias corrected MLE)	0.32		
128					Theta hat (MLE)	2.97			Theta star (bias corrected MLE)	3.013		
129					nu hat (MLE)	42.79			nu star (bias corrected)	42.18		
130					Mean (detects)	0.963						
131												
132	**Gamma ROS Statistics using Imputed Non-Detects**											
133	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
134	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
135	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
136	This is especially true when the sample size is small.											
137	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
138					Minimum	0.00177			Mean	0.871		
139					Maximum	17.5			Median	0.103		
140					SD	2.463			CV	2.827		
141					k hat (MLE)	0.307			k star (bias corrected MLE)	0.304		
142					Theta hat (MLE)	2.838			Theta star (bias corrected MLE)	2.87		
143					nu hat (MLE)	44.83			nu star (bias corrected)	44.32		
144					Adjusted Level of Significance (β)	0.0467						
145					Approximate Chi Square Value (44.32, α)	30.05			Adjusted Chi Square Value (44.32, β)	29.81		
146					95% Gamma Approximate UCL (use when n>=50)	1.285			95% Gamma Adjusted UCL (use when n<50)	1.295		
147												
148	**Estimates of Gamma Parameters using KM Estimates**											
149					Mean (KM)	0.871			SD (KM)	2.447		
150					Variance (KM)	5.986			SE of Mean (KM)	0.289		
151					k hat (KM)	0.127			k star (KM)	0.131		
152					nu hat (KM)	18.48			nu star (KM)	19.06		
153					theta hat (KM)	6.876			theta star (KM)	6.669		
154					80% gamma percentile (KM)	0.835			90% gamma percentile (KM)	2.518		
155					95% gamma percentile (KM)	4.909			99% gamma percentile (KM)	12.06		
156												
157	**Gamma Kaplan-Meier (KM) Statistics**											
158					Approximate Chi Square Value (19.06, α)	10.16			Adjusted Chi Square Value (19.06, β)	10.03		
159					95% Gamma Approximate KM-UCL (use when n>=50)	1.633			95% Gamma Adjusted KM-UCL (use when n<50)	1.654		
160												
161	**Lognormal GOF Test on Detected Observations Only**											
162					Shapiro Wilk Approximate Test Statistic	0.965			**Shapiro Wilk GOF Test**			

163				5% Shapiro Wilk P Value	0.151	Detected Data appear Lognormal at 5% Significance Level						
164				Lilliefors Test Statistic	0.0616	**Lilliefors GOF Test**						
165				5% Lilliefors Critical Value	0.109	Detected Data appear Lognormal at 5% Significance Level						
166	**Detected Data appear Lognormal at 5% Significance Level**											
167												
168	**Lognormal ROS Statistics Using Imputed Non-Detects**											
169				Mean in Original Scale	0.871	Mean in Log Scale	-2.593					
170				SD in Original Scale	2.464	SD in Log Scale	2.623					
171				95% t UCL (assumes normality of ROS data)	1.351	95% Percentile Bootstrap UCL	1.376					
172				95% BCA Bootstrap UCL	1.599	95% Bootstrap t UCL	1.845					
173				95% H-UCL (Log ROS)	8.647							
174												
175	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
176				KM Mean (logged)	-2.525	KM Geo Mean	0.08					
177				KM SD (logged)	2.481	95% Critical H Value (KM-Log)	4.044					
178				KM Standard Error of Mean (logged)	0.293	95% H-UCL (KM -Log)	5.662					
179				KM SD (logged)	2.481	95% Critical H Value (KM-Log)	4.044					
180				KM Standard Error of Mean (logged)	0.293							
181												
182	**DL/2 Statistics**											
183	**DL/2 Normal**					**DL/2 Log-Transformed**						
184				Mean in Original Scale	0.871	Mean in Log Scale	-2.547					
185				SD in Original Scale	2.464	SD in Log Scale	2.54					
186				95% t UCL (Assumes normality)	1.351	95% H-Stat UCL	6.772					
187	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
188												
189	**Nonparametric Distribution Free UCL Statistics**											
190	**Detected Data appear Lognormal Distributed at 5% Significance Level**											
191												
192	**Suggested UCL to Use**											
193				KM H-UCL	5.662							
194												
195	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
196	Recommendations are based upon data size, data distribution, and skewness.											
197	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
198	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
199												
200	**Benzo[a]pyrene**											
201												
202	**General Statistics**											
203				Total Number of Observations	73	Number of Distinct Observations	72					
204				Number of Detects	70	Number of Non-Detects	3					
205				Number of Distinct Detects	70	Number of Distinct Non-Detects	2					
206				Minimum Detect	0.00222	Minimum Non-Detect	0.00167					
207				Maximum Detect	28.9	Maximum Non-Detect	0.00832					
208				Variance Detects	16.79	Percent Non-Detects	4.11%					
209				Mean Detects	1.53	SD Detects	4.097					
210				Median Detects	0.172	CV Detects	2.678					
211				Skewness Detects	5.007	Kurtosis Detects	29.78					
212				Mean of Logged Detects	-1.841	SD of Logged Detects	2.439					
213												
214	**Normal GOF Test on Detects Only**											
215				Shapiro Wilk Test Statistic	0.423	**Normal GOF Test on Detected Observations Only**						
216				5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level						

217					Lilliefors Test Statistic	0.355	**Lilliefors GOF Test**					
218					5% Lilliefors Critical Value	0.106	Detected Data Not Normal at 5% Significance Level					
219	**Detected Data Not Normal at 5% Significance Level**											
220												
221	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
222					KM Mean	1.467	KM Standard Error of Mean	0.471				
223					KM SD	3.995	95% KM (BCA) UCL	2.348				
224					95% KM (t) UCL	2.252	95% KM (Percentile Bootstrap) UCL	2.292				
225					95% KM (z) UCL	2.242	95% KM Bootstrap t UCL	2.963				
226					90% KM Chebyshev UCL	2.88	95% KM Chebyshev UCL	3.52				
227					97.5% KM Chebyshev UCL	4.408	99% KM Chebyshev UCL	6.153				
228												
229	**Gamma GOF Tests on Detected Observations Only**											
230					A-D Test Statistic	2.168	**Anderson-Darling GOF Test**					
231					5% A-D Critical Value	0.865	Detected Data Not Gamma Distributed at 5% Significance Level					
232					K-S Test Statistic	0.138	**Kolmogorov-Smirnov GOF**					
233					5% K-S Critical Value	0.116	Detected Data Not Gamma Distributed at 5% Significance Level					
234	**Detected Data Not Gamma Distributed at 5% Significance Level**											
235												
236	**Gamma Statistics on Detected Data Only**											
237					k hat (MLE)	0.304	k star (bias corrected MLE)	0.3				
238					Theta hat (MLE)	5.037	Theta star (bias corrected MLE)	5.095				
239					nu hat (MLE)	42.52	nu star (bias corrected)	42.03				
240					Mean (detects)	1.53						
241												
242	**Gamma ROS Statistics using Imputed Non-Detects**											
243	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
244	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
245	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
246	This is especially true when the sample size is small.											
247	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
248					Minimum	0.00222	Mean	1.467				
249					Maximum	28.9	Median	0.161				
250					SD	4.022	CV	2.741				
251					k hat (MLE)	0.296	k star (bias corrected MLE)	0.293				
252					Theta hat (MLE)	4.963	Theta star (bias corrected MLE)	5.014				
253					nu hat (MLE)	43.17	nu star (bias corrected)	42.72				
254					Adjusted Level of Significance (β)	0.0467						
255					Approximate Chi Square Value (42.72, α)	28.74	Adjusted Chi Square Value (42.72, β)	28.51				
256					95% Gamma Approximate UCL (use when n>=50)	2.181	95% Gamma Adjusted UCL (use when n<50)	2.199				
257												
258	**Estimates of Gamma Parameters using KM Estimates**											
259					Mean (KM)	1.467	SD (KM)	3.995				
260					Variance (KM)	15.96	SE of Mean (KM)	0.471				
261					k hat (KM)	0.135	k star (KM)	0.138				
262					nu hat (KM)	19.69	nu star (KM)	20.21				
263					theta hat (KM)	10.88	theta star (KM)	10.6				
264					80% gamma percentile (KM)	1.489	90% gamma percentile (KM)	4.294				
265					95% gamma percentile (KM)	8.193	99% gamma percentile (KM)	19.7				
266												
267	**Gamma Kaplan-Meier (KM) Statistics**											
268					Approximate Chi Square Value (20.21, α)	11.01	Adjusted Chi Square Value (20.21, β)	10.87				
269					95% Gamma Approximate KM-UCL (use when n>=50)	2.694	95% Gamma Adjusted KM-UCL (use when n<50)	2.728				
270												

271	**Lognormal GOF Test on Detected Observations Only**											
272					Shapiro Wilk Approximate Test Statistic	0.959	**Shapiro Wilk GOF Test**					
273					5% Shapiro Wilk P Value	0.0607	Detected Data appear Lognormal at 5% Significance Level					
274					Lilliefors Test Statistic	0.0661	**Lilliefors GOF Test**					
275					5% Lilliefors Critical Value	0.106	Detected Data appear Lognormal at 5% Significance Level					
276	**Detected Data appear Lognormal at 5% Significance Level**											
277												
278	**Lognormal ROS Statistics Using Imputed Non-Detects**											
279					Mean in Original Scale	1.467	Mean in Log Scale	-2.062				
280					SD in Original Scale	4.022	SD in Log Scale	2.629				
281					95% t UCL (assumes normality of ROS data)	2.251	95% Percentile Bootstrap UCL	2.267				
282					95% BCA Bootstrap UCL	2.657	95% Bootstrap t UCL	3.104				
283					95% H-UCL (Log ROS)	15.01						
284												
285	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
286					KM Mean (logged)	-2.019	KM Geo Mean	0.133				
287					KM SD (logged)	2.524	95% Critical H Value (KM-Log)	4.102				
288					KM Standard Error of Mean (logged)	0.298	95% H-UCL (KM -Log)	10.87				
289					KM SD (logged)	2.524	95% Critical H Value (KM-Log)	4.102				
290					KM Standard Error of Mean (logged)	0.298						
291												
292	**DL/2 Statistics**											
293	**DL/2 Normal**						**DL/2 Log-Transformed**					
294					Mean in Original Scale	1.467	Mean in Log Scale	-2.035				
295					SD in Original Scale	4.022	SD in Log Scale	2.572				
296					95% t UCL (Assumes normality)	2.251	95% H-Stat UCL	12.61				
297	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
298												
299	**Nonparametric Distribution Free UCL Statistics**											
300	**Detected Data appear Lognormal Distributed at 5% Significance Level**											
301												
302	**Suggested UCL to Use**											
303					KM H-UCL	10.87						
304												
305	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
306	Recommendations are based upon data size, data distribution, and skewness.											
307	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
308	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
309												
310	**Benzo[b]fluoranthene**											
311												
312	**General Statistics**											
313					Total Number of Observations	73	Number of Distinct Observations	71				
314					Number of Detects	71	Number of Non-Detects	2				
315					Number of Distinct Detects	70	Number of Distinct Non-Detects	1				
316					Minimum Detect	0.00248	Minimum Non-Detect	0.00167				
317					Maximum Detect	26.4	Maximum Non-Detect	0.00167				
318					Variance Detects	14.63	Percent Non-Detects	2.74%				
319					Mean Detects	1.534	SD Detects	3.825				
320					Median Detects	0.223	CV Detects	2.494				
321					Skewness Detects	4.711	Kurtosis Detects	26.52				
322					Mean of Logged Detects	-1.65	SD of Logged Detects	2.355				
323												
324	**Normal GOF Test on Detects Only**											

	A	B	C	D	E	F	G	H	I	J	K	L
325					Shapiro Wilk Test Statistic	0.451	**Normal GOF Test on Detected Observations Only**					
326					5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level					
327					Lilliefors Test Statistic	0.344	**Lilliefors GOF Test**					
328					5% Lilliefors Critical Value	0.105	Detected Data Not Normal at 5% Significance Level					
329	**Detected Data Not Normal at 5% Significance Level**											
330												
331	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
332					KM Mean	1.492	KM Standard Error of Mean	0.442				
333					KM SD	3.753	95% KM (BCA) UCL	2.362				
334					95% KM (t) UCL	2.229	95% KM (Percentile Bootstrap) UCL	2.231				
335					95% KM (z) UCL	2.219	95% KM Bootstrap t UCL	2.906				
336					90% KM Chebyshev UCL	2.819	95% KM Chebyshev UCL	3.42				
337					97.5% KM Chebyshev UCL	4.255	99% KM Chebyshev UCL	5.894				
338												
339	**Gamma GOF Tests on Detected Observations Only**											
340					A-D Test Statistic	1.799	**Anderson-Darling GOF Test**					
341					5% A-D Critical Value	0.859	Detected Data Not Gamma Distributed at 5% Significance Level					
342					K-S Test Statistic	0.126	**Kolmogorov-Smirnov GOF**					
343					5% K-S Critical Value	0.115	Detected Data Not Gamma Distributed at 5% Significance Level					
344	**Detected Data Not Gamma Distributed at 5% Significance Level**											
345												
346	**Gamma Statistics on Detected Data Only**											
347					k hat (MLE)	0.327	k star (bias corrected MLE)	0.323				
348					Theta hat (MLE)	4.686	Theta star (bias corrected MLE)	4.751				
349					nu hat (MLE)	46.47	nu star (bias corrected)	45.84				
350					Mean (detects)	1.534						
351												
352	**Gamma ROS Statistics using Imputed Non-Detects**											
353	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
354	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
355	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
356	This is especially true when the sample size is small.											
357	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
358					Minimum	0.00248	Mean	1.492				
359					Maximum	26.4	Median	0.193				
360					SD	3.779	CV	2.533				
361					k hat (MLE)	0.32	k star (bias corrected MLE)	0.316				
362					Theta hat (MLE)	4.659	Theta star (bias corrected MLE)	4.718				
363					nu hat (MLE)	46.75	nu star (bias corrected)	46.16				
364					Adjusted Level of Significance (β)	0.0467						
365					Approximate Chi Square Value (46.16, α)	31.57	Adjusted Chi Square Value (46.16, β)	31.33				
366					95% Gamma Approximate UCL (use when n>=50)	2.181	95% Gamma Adjusted UCL (use when n<50)	2.198				
367												
368	**Estimates of Gamma Parameters using KM Estimates**											
369					Mean (KM)	1.492	SD (KM)	3.753				
370					Variance (KM)	14.09	SE of Mean (KM)	0.442				
371					k hat (KM)	0.158	k star (KM)	0.161				
372					nu hat (KM)	23.06	nu star (KM)	23.44				
373					theta hat (KM)	9.445	theta star (KM)	9.29				
374					80% gamma percentile (KM)	1.712	90% gamma percentile (KM)	4.46				
375					95% gamma percentile (KM)	8.097	99% gamma percentile (KM)	18.51				
376												
377	**Gamma Kaplan-Meier (KM) Statistics**											
378					Approximate Chi Square Value (23.44, α)	13.42	Adjusted Chi Square Value (23.44, β)	13.27				

	A	B	C	D	E	F	G	H	I	J	K	L
379	95% Gamma Approximate KM-UCL (use when n>=50)					2.605	95% Gamma Adjusted KM-UCL (use when n<50)					2.635
380												
381	**Lognormal GOF Test on Detected Observations Only**											
382	Shapiro Wilk Approximate Test Statistic					0.96	**Shapiro Wilk GOF Test**					
383	5% Shapiro Wilk P Value					0.068	Detected Data appear Lognormal at 5% Significance Level					
384	Lilliefors Test Statistic					0.0796	**Lilliefors GOF Test**					
385	5% Lilliefors Critical Value					0.105	Detected Data appear Lognormal at 5% Significance Level					
386	**Detected Data appear Lognormal at 5% Significance Level**											
387												
388	**Lognormal ROS Statistics Using Imputed Non-Detects**											
389	Mean in Original Scale					1.492	Mean in Log Scale					-1.812
390	SD in Original Scale					3.779	SD in Log Scale					2.519
391	95% t UCL (assumes normality of ROS data)					2.229	95% Percentile Bootstrap UCL					2.315
392	95% BCA Bootstrap UCL					2.531	95% Bootstrap t UCL					2.927
393	95% H-UCL (Log ROS)					13.15						
394												
395	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
396	KM Mean (logged)					-1.78	KM Geo Mean					0.169
397	KM SD (logged)					2.433	95% Critical H Value (KM-Log)					3.98
398	KM Standard Error of Mean (logged)					0.287	95% H-UCL (KM -Log)					10.18
399	KM SD (logged)					2.433	95% Critical H Value (KM-Log)					3.98
400	KM Standard Error of Mean (logged)					0.287						
401												
402	**DL/2 Statistics**											
403	**DL/2 Normal**						**DL/2 Log-Transformed**					
404	Mean in Original Scale					1.492	Mean in Log Scale					-1.799
405	SD in Original Scale					3.779	SD in Log Scale					2.488
406	95% t UCL (Assumes normality)					2.229	95% H-Stat UCL					12.01
407	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
408												
409	**Nonparametric Distribution Free UCL Statistics**											
410	**Detected Data appear Lognormal Distributed at 5% Significance Level**											
411												
412	**Suggested UCL to Use**											
413	KM H-UCL					10.18						
414												
415	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
416	Recommendations are based upon data size, data distribution, and skewness.											
417	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
418	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
419												
420												
421	**Chromium**											
422												
423	**General Statistics**											
424	Total Number of Observations					73	Number of Distinct Observations					62
425							Number of Missing Observations					0
426	Minimum					5.51	Mean					13.07
427	Maximum					43.2	Median					11.6
428	SD					6.206	Std. Error of Mean					0.726
429	Coefficient of Variation					0.475	Skewness					2.735
430												
431	**Normal GOF Test**											
432	Shapiro Wilk Test Statistic					0.751	**Shapiro Wilk GOF Test**					

433				5% Shapiro Wilk P Value		0		Data Not Normal at 5% Significance Level				
434				Lilliefors Test Statistic		0.194		**Lilliefors GOF Test**				
435				5% Lilliefors Critical Value		0.104		Data Not Normal at 5% Significance Level				
436						**Data Not Normal at 5% Significance Level**							
437												
438						**Assuming Normal Distribution**							
439				**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**				
440				95% Student's-t UCL		14.28		95% Adjusted-CLT UCL (Chen-1995)				14.51
441								95% Modified-t UCL (Johnson-1978)				14.31
442												
443						**Gamma GOF Test**							
444				A-D Test Statistic		1.866		**Anderson-Darling Gamma GOF Test**				
445				5% A-D Critical Value		0.753		Data Not Gamma Distributed at 5% Significance Level				
446				K-S Test Statistic		0.151		**Kolmogorov-Smirnov Gamma GOF Test**				
447				5% K-S Critical Value		0.105		Data Not Gamma Distributed at 5% Significance Level				
448						**Data Not Gamma Distributed at 5% Significance Level**							
449												
450						**Gamma Statistics**							
451				k hat (MLE)		6.622		k star (bias corrected MLE)				6.359
452				Theta hat (MLE)		1.973		Theta star (bias corrected MLE)				2.055
453				nu hat (MLE)		966.8		nu star (bias corrected)				928.4
454				MLE Mean (bias corrected)		13.07		MLE Sd (bias corrected)				5.181
455								Approximate Chi Square Value (0.05)				858.6
456				Adjusted Level of Significance		0.0467		Adjusted Chi Square Value				857.3
457												
458						**Assuming Gamma Distribution**							
459				95% Approximate Gamma UCL (use when n>=50))		14.13		95% Adjusted Gamma UCL (use when n<50)				14.15
460												
461						**Lognormal GOF Test**							
462				Shapiro Wilk Test Statistic		0.947		**Shapiro Wilk Lognormal GOF Test**				
463				5% Shapiro Wilk P Value		0.00838		Data Not Lognormal at 5% Significance Level				
464				Lilliefors Test Statistic		0.122		**Lilliefors Lognormal GOF Test**				
465				5% Lilliefors Critical Value		0.104		Data Not Lognormal at 5% Significance Level				
466						**Data Not Lognormal at 5% Significance Level**							
467												
468						**Lognormal Statistics**							
469				Minimum of Logged Data		1.707		Mean of logged Data				2.493
470				Maximum of Logged Data		3.766		SD of logged Data				0.371
471												
472						**Assuming Lognormal Distribution**							
473				95% H-UCL		14		90% Chebyshev (MVUE) UCL				14.68
474				95% Chebyshev (MVUE) UCL		15.47		97.5% Chebyshev (MVUE) UCL				16.56
475				99% Chebyshev (MVUE) UCL		18.7						
476												
477						**Nonparametric Distribution Free UCL Statistics**							
478						**Data do not follow a Discernible Distribution (0.05)**							
479												
480						**Nonparametric Distribution Free UCLs**							
481				95% CLT UCL		14.26		95% Jackknife UCL				14.28
482				95% Standard Bootstrap UCL		14.27		95% Bootstrap-t UCL				14.59
483				95% Hall's Bootstrap UCL		14.74		95% Percentile Bootstrap UCL				14.25
484				95% BCA Bootstrap UCL		14.48						
485				90% Chebyshev(Mean, Sd) UCL		15.24		95% Chebyshev(Mean, Sd) UCL				16.23
486				97.5% Chebyshev(Mean, Sd) UCL		17.6		99% Chebyshev(Mean, Sd) UCL				20.29

487												
488	**Suggested UCL to Use**											
489				95% Student's-t UCL		14.28		or 95% Modified-t UCL			14.31	
490												
491	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
492	Recommendations are based upon data size, data distribution, and skewness.											
493	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
494	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
495												
496	**Dibenz[a,h]anthracene**											
497												
498	**General Statistics**											
499				Total Number of Observations		73		Number of Distinct Observations			24	
500				Number of Detects		5		Number of Non-Detects			68	
501				Number of Distinct Detects		5		Number of Distinct Non-Detects			19	
502				Minimum Detect		0.00541		Minimum Non-Detect			0.00166	
503				Maximum Detect		1.26		Maximum Non-Detect			0.669	
504				Variance Detects		0.257		Percent Non-Detects			93.15%	
505				Mean Detects		0.364		SD Detects			0.507	
506				Median Detects		0.175		CV Detects			1.392	
507				Skewness Detects		2.094		Kurtosis Detects			4.555	
508				Mean of Logged Detects		-2.012		SD of Logged Detects			1.978	
509												
510	**Normal GOF Test on Detects Only**											
511				Shapiro Wilk Test Statistic		0.692		**Shapiro Wilk GOF Test**				
512				5% Shapiro Wilk Critical Value		0.762		Detected Data Not Normal at 5% Significance Level				
513				Lilliefors Test Statistic		0.42		**Lilliefors GOF Test**				
514				5% Lilliefors Critical Value		0.343		Detected Data Not Normal at 5% Significance Level				
515	**Detected Data Not Normal at 5% Significance Level**											
516												
517	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
518				KM Mean		0.0268		KM Standard Error of Mean			0.0196	
519				KM SD		0.15		95% KM (BCA) UCL			0.0613	
520				95% KM (t) UCL		0.0595		95% KM (Percentile Bootstrap) UCL			0.0607	
521				95% KM (z) UCL		0.0591		95% KM Bootstrap t UCL			0.1	
522				90% KM Chebyshev UCL		0.0857		95% KM Chebyshev UCL			0.112	
523				97.5% KM Chebyshev UCL		0.149		99% KM Chebyshev UCL			0.222	
524												
525	**Gamma GOF Tests on Detected Observations Only**											
526				A-D Test Statistic		0.441		**Anderson-Darling GOF Test**				
527				5% A-D Critical Value		0.705		Detected data appear Gamma Distributed at 5% Significance Level				
528				K-S Test Statistic		0.281		**Kolmogorov-Smirnov GOF**				
529				5% K-S Critical Value		0.369		Detected data appear Gamma Distributed at 5% Significance Level				
530	**Detected data appear Gamma Distributed at 5% Significance Level**											
531												
532	**Gamma Statistics on Detected Data Only**											
533				k hat (MLE)		0.615		k star (bias corrected MLE)			0.379	
534				Theta hat (MLE)		0.593		Theta star (bias corrected MLE)			0.961	
535				nu hat (MLE)		6.146		nu star (bias corrected)			3.792	
536				Mean (detects)		0.364						
537												
538	**Gamma ROS Statistics using Imputed Non-Detects**											
539	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
540	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											

541	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
542	This is especially true when the sample size is small.											
543	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
544					Minimum	0.00541				Mean	0.0343	
545					Maximum	1.26				Median	0.01	
546					SD	0.15				CV	4.368	
547					k hat (MLE)	0.588				k star (bias corrected MLE)	0.573	
548					Theta hat (MLE)	0.0583				Theta star (bias corrected MLE)	0.0598	
549					nu hat (MLE)	85.85				nu star (bias corrected)	83.66	
550					Adjusted Level of Significance (β)	0.0467						
551					Approximate Chi Square Value (83.66, α)	63.58				Adjusted Chi Square Value (83.66, β)	63.22	
552					95% Gamma Approximate UCL (use when n>=50)	0.0451				95% Gamma Adjusted UCL (use when n<50)	0.0453	
553												
554	**Estimates of Gamma Parameters using KM Estimates**											
555					Mean (KM)	0.0268				SD (KM)	0.15	
556					Variance (KM)	0.0225				SE of Mean (KM)	0.0196	
557					k hat (KM)	0.0319				k star (KM)	0.0397	
558					nu hat (KM)	4.652				nu star (KM)	5.794	
559					theta hat (KM)	0.84				theta star (KM)	0.675	
560					80% gamma percentile (KM)	0.00142				90% gamma percentile (KM)	0.0286	
561					95% gamma percentile (KM)	0.128				99% gamma percentile (KM)	0.634	
562												
563	**Gamma Kaplan-Meier (KM) Statistics**											
564					Approximate Chi Square Value (5.79, α)	1.536				Adjusted Chi Square Value (5.79, β)	1.493	
565					95% Gamma Approximate KM-UCL (use when n>=50)	0.101				95% Gamma Adjusted KM-UCL (use when n<50)	0.104	
566												
567	**Lognormal GOF Test on Detected Observations Only**											
568					Shapiro Wilk Test Statistic	0.861				**Shapiro Wilk GOF Test**		
569					5% Shapiro Wilk Critical Value	0.762				Detected Data appear Lognormal at 5% Significance Level		
570					Lilliefors Test Statistic	0.349				**Lilliefors GOF Test**		
571					5% Lilliefors Critical Value	0.343				Detected Data Not Lognormal at 5% Significance Level		
572	**Detected Data appear Approximate Lognormal at 5% Significance Level**											
573												
574	**Lognormal ROS Statistics Using Imputed Non-Detects**											
575					Mean in Original Scale	0.0251				Mean in Log Scale	-10.64	
576					SD in Original Scale	0.151				SD in Log Scale	3.667	
577					95% t UCL (assumes normality of ROS data)	0.0546				95% Percentile Bootstrap UCL	0.059	
578					95% BCA Bootstrap UCL	0.0923				95% Bootstrap t UCL	0.19	
579					95% H-UCL (Log ROS)	0.232						
580												
581	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
582					KM Mean (logged)	-6.075				KM Geo Mean	0.0023	
583					KM SD (logged)	1.215				95% Critical H Value (KM-Log)	2.475	
584					KM Standard Error of Mean (logged)	0.163				95% H-UCL (KM -Log)	0.00686	
585					KM SD (logged)	1.215				95% Critical H Value (KM-Log)	2.475	
586					KM Standard Error of Mean (logged)	0.163						
587												
588	**DL/2 Statistics**											
589	**DL/2 Normal**									**DL/2 Log-Transformed**		
590					Mean in Original Scale	0.0379				Mean in Log Scale	-5.385	
591					SD in Original Scale	0.155				SD in Log Scale	1.73	
592					95% t UCL (Assumes normality)	0.0681				95% H-Stat UCL	0.0382	
593	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
594												

	A	B	C	D	E	F	G	H	I	J	K	L
595	**Nonparametric Distribution Free UCL Statistics**											
596	**Detected Data appear Gamma Distributed at 5% Significance Level**											
597												
598	**Suggested UCL to Use**											
599	95% KM Approximate Gamma UCL					0.101						
600												
601	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
602	Recommendations are based upon data size, data distribution, and skewness.											
603	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
604	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
605												
606	**Indeno[1,2,3-cd]pyrene**											
607												
608	**General Statistics**											
609	Total Number of Observations					73		Number of Distinct Observations				69
610	Number of Detects					69		Number of Non-Detects				4
611	Number of Distinct Detects					67		Number of Distinct Non-Detects				2
612	Minimum Detect					0.00187		Minimum Non-Detect				0.00167
613	Maximum Detect					21.5		Maximum Non-Detect				0.00832
614	Variance Detects					8.909		Percent Non-Detects				5.479%
615	Mean Detects					1.106		SD Detects				2.985
616	Median Detects					0.142		CV Detects				2.698
617	Skewness Detects					5.241		Kurtosis Detects				32.8
618	Mean of Logged Detects					-2.111		SD of Logged Detects				2.37
619												
620	**Normal GOF Test on Detects Only**											
621	Shapiro Wilk Test Statistic					0.417		**Normal GOF Test on Detected Observations Only**				
622	5% Shapiro Wilk P Value					0		Detected Data Not Normal at 5% Significance Level				
623	Lilliefors Test Statistic					0.356		**Lilliefors GOF Test**				
624	5% Lilliefors Critical Value					0.107		Detected Data Not Normal at 5% Significance Level				
625	**Detected Data Not Normal at 5% Significance Level**											
626												
627	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
628	KM Mean					1.046		KM Standard Error of Mean				0.341
629	KM SD					2.892		95% KM (BCA) UCL				1.689
630	95% KM (t) UCL					1.614		95% KM (Percentile Bootstrap) UCL				1.663
631	95% KM (z) UCL					1.606		95% KM Bootstrap t UCL				2.179
632	90% KM Chebyshev UCL					2.068		95% KM Chebyshev UCL				2.532
633	97.5% KM Chebyshev UCL					3.175		99% KM Chebyshev UCL				4.438
634												
635	**Gamma GOF Tests on Detected Observations Only**											
636	A-D Test Statistic					2.334		**Anderson-Darling GOF Test**				
637	5% A-D Critical Value					0.863		Detected Data Not Gamma Distributed at 5% Significance Level				
638	K-S Test Statistic					0.156		**Kolmogorov-Smirnov GOF**				
639	5% K-S Critical Value					0.116		Detected Data Not Gamma Distributed at 5% Significance Level				
640	**Detected Data Not Gamma Distributed at 5% Significance Level**											
641												
642	**Gamma Statistics on Detected Data Only**											
643	k hat (MLE)					0.31		k star (bias corrected MLE)				0.306
644	Theta hat (MLE)					3.568		Theta star (bias corrected MLE)				3.612
645	nu hat (MLE)					42.79		nu star (bias corrected)				42.26
646	Mean (detects)					1.106						
647												
648	**Gamma ROS Statistics using Imputed Non-Detects**											

649	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
650	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
651	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
652	This is especially true when the sample size is small.											
653	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
654					Minimum	0.00187			Mean	1.046		
655					Maximum	21.5			Median	0.108		
656					SD	2.912			CV	2.783		
657					k hat (MLE)	0.301			k star (bias corrected MLE)	0.297		
658					Theta hat (MLE)	3.48			Theta star (bias corrected MLE)	3.517		
659					nu hat (MLE)	43.89			nu star (bias corrected)	43.42		
660					Adjusted Level of Significance (β)	0.0467						
661					Approximate Chi Square Value (43.42, α)	29.31			Adjusted Chi Square Value (43.42, β)	29.08		
662					95% Gamma Approximate UCL (use when n>=50)	1.55			95% Gamma Adjusted UCL (use when n<50)	1.562		
663												
664	**Estimates of Gamma Parameters using KM Estimates**											
665					Mean (KM)	1.046			SD (KM)	2.892		
666					Variance (KM)	8.362			SE of Mean (KM)	0.341		
667					k hat (KM)	0.131			k star (KM)	0.135		
668					nu hat (KM)	19.09			nu star (KM)	19.64		
669					theta hat (KM)	7.997			theta star (KM)	7.774		
670					80% gamma percentile (KM)	1.033			90% gamma percentile (KM)	3.044		
671					95% gamma percentile (KM)	5.869			99% gamma percentile (KM)	14.26		
672												
673	**Gamma Kaplan-Meier (KM) Statistics**											
674					Approximate Chi Square Value (19.64, α)	10.58			Adjusted Chi Square Value (19.64, β)	10.45		
675					95% Gamma Approximate KM-UCL (use when n>=50)	1.94			95% Gamma Adjusted KM-UCL (use when n<50)	1.965		
676												
677	**Lognormal GOF Test on Detected Observations Only**											
678					Shapiro Wilk Approximate Test Statistic	0.959			**Shapiro Wilk GOF Test**			
679					5% Shapiro Wilk P Value	0.0616			Detected Data appear Lognormal at 5% Significance Level			
680					Lilliefors Test Statistic	0.0841			**Lilliefors GOF Test**			
681					5% Lilliefors Critical Value	0.107			Detected Data appear Lognormal at 5% Significance Level			
682	**Detected Data appear Lognormal at 5% Significance Level**											
683												
684	**Lognormal ROS Statistics Using Imputed Non-Detects**											
685					Mean in Original Scale	1.046			Mean in Log Scale	-2.399		
686					SD in Original Scale	2.912			SD in Log Scale	2.61		
687					95% t UCL (assumes normality of ROS data)	1.613			95% Percentile Bootstrap UCL	1.631		
688					95% BCA Bootstrap UCL	1.843			95% Bootstrap t UCL	2.172		
689					95% H-UCL (Log ROS)	10.01						
690												
691	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
692					KM Mean (logged)	-2.337			KM Geo Mean	0.0966		
693					KM SD (logged)	2.474			95% Critical H Value (KM-Log)	4.035		
694					KM Standard Error of Mean (logged)	0.292			95% H-UCL (KM -Log)	6.683		
695					KM SD (logged)	2.474			95% Critical H Value (KM-Log)	4.035		
696					KM Standard Error of Mean (logged)	0.292						
697												
698	**DL/2 Statistics**											
699	**DL/2 Normal**								**DL/2 Log-Transformed**			
700					Mean in Original Scale	1.046			Mean in Log Scale	-2.362		
701					SD in Original Scale	2.912			SD in Log Scale	2.536		
702					95% t UCL (Assumes normality)	1.613			95% H-Stat UCL	8.04		

703	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
704												
705	**Nonparametric Distribution Free UCL Statistics**											
706	**Detected Data appear Lognormal Distributed at 5% Significance Level**											
707												
708	**Suggested UCL to Use**											
709				KM H-UCL	6.683							
710												
711	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
712	Recommendations are based upon data size, data distribution, and skewness.											
713	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
714	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
715												
716	**lead**											
717												
718	**General Statistics**											
719				Total Number of Observations	73			Number of Distinct Observations	71			
720								Number of Missing Observations	0			
721				Minimum	8.74			Mean	52.27			
722				Maximum	531			Median	28.7			
723				SD	81.25			Std. Error of Mean	9.51			
724				Coefficient of Variation	1.554			Skewness	4.338			
725												
726	**Normal GOF Test**											
727				Shapiro Wilk Test Statistic	0.514			**Shapiro Wilk GOF Test**				
728				5% Shapiro Wilk P Value	0			Data Not Normal at 5% Significance Level				
729				Lilliefors Test Statistic	0.296			**Lilliefors GOF Test**				
730				5% Lilliefors Critical Value	0.104			Data Not Normal at 5% Significance Level				
731	**Data Not Normal at 5% Significance Level**											
732												
733	**Assuming Normal Distribution**											
734				**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**				
735				95% Student's-t UCL	68.12			95% Adjusted-CLT UCL (Chen-1995)	73.07			
736								95% Modified-t UCL (Johnson-1978)	68.92			
737												
738	**Gamma GOF Test**											
739				A-D Test Statistic	3.039			**Anderson-Darling Gamma GOF Test**				
740				5% A-D Critical Value	0.779			Data Not Gamma Distributed at 5% Significance Level				
741				K-S Test Statistic	0.146			**Kolmogorov-Smirnov Gamma GOF Test**				
742				5% K-S Critical Value	0.107			Data Not Gamma Distributed at 5% Significance Level				
743	**Data Not Gamma Distributed at 5% Significance Level**											
744												
745	**Gamma Statistics**											
746				k hat (MLE)	1.088			k star (bias corrected MLE)	1.052			
747				Theta hat (MLE)	48.05			Theta star (bias corrected MLE)	49.67			
748				nu hat (MLE)	158.8			nu star (bias corrected)	153.6			
749				MLE Mean (bias corrected)	52.27			MLE Sd (bias corrected)	50.96			
750								Approximate Chi Square Value (0.05)	126			
751				Adjusted Level of Significance	0.0467			Adjusted Chi Square Value	125.5			
752												
753	**Assuming Gamma Distribution**											
754				95% Approximate Gamma UCL (use when n>=50))	63.74			95% Adjusted Gamma UCL (use when n<50)	64			
755												
756	**Lognormal GOF Test**											

	A	B	C	D	E	F	G	H	I	J	K	L
757				Shapiro Wilk Test Statistic		0.934	**Shapiro Wilk Lognormal GOF Test**					
758				5% Shapiro Wilk P Value		0.00101	Data Not Lognormal at 5% Significance Level					
759				Lilliefors Test Statistic		0.0925	**Lilliefors Lognormal GOF Test**					
760				5% Lilliefors Critical Value		0.104	Data appear Lognormal at 5% Significance Level					
761	**Data appear Approximate Lognormal at 5% Significance Level**											
762												
763	**Lognormal Statistics**											
764				Minimum of Logged Data		2.168				Mean of logged Data		3.431
765				Maximum of Logged Data		6.275				SD of logged Data		0.923
766												
767	**Assuming Lognormal Distribution**											
768				95% H-UCL		60.03				90% Chebyshev (MVUE) UCL		64.7
769				95% Chebyshev (MVUE) UCL		72.74				97.5% Chebyshev (MVUE) UCL		83.9
770				99% Chebyshev (MVUE) UCL		105.8						
771												
772	**Nonparametric Distribution Free UCL Statistics**											
773	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
774												
775	**Nonparametric Distribution Free UCLs**											
776				95% CLT UCL		67.91				95% Jackknife UCL		68.12
777				95% Standard Bootstrap UCL		67.78				95% Bootstrap-t UCL		83.2
778				95% Hall's Bootstrap UCL		143				95% Percentile Bootstrap UCL		68.96
779				95% BCA Bootstrap UCL		75.26						
780				90% Chebyshev(Mean, Sd) UCL		80.8				95% Chebyshev(Mean, Sd) UCL		93.72
781				97.5% Chebyshev(Mean, Sd) UCL		111.7				99% Chebyshev(Mean, Sd) UCL		146.9
782												
783	**Suggested UCL to Use**											
784				95% H-UCL		60.03						
785												
786	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
787	Recommendations are based upon data size, data distribution, and skewness.											
788	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
789	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
790												
791	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
792	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
793	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
794	**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
795	**BaP_TEQ_HalfRL for ND**											
796												
797	**General Statistics**											
798				Total Number of Observations		79				Number of Distinct Observations		77
799				Number of Detects		74				Number of Non-Detects		5
800				Number of Distinct Detects		74				Number of Distinct Non-Detects		3
801				Minimum Detect		0.00358				Minimum Non-Detect		0.00193
802				Maximum Detect		35.56				Maximum Non-Detect		0.0105
803				Variance Detects		26.1				Percent Non-Detects		6.329%
804				Mean Detects		2.023				SD Detects		5.109
805				Median Detects		0.254				CV Detects		2.525
806				Skewness Detects		4.638				Kurtosis Detects		26.15
807				Mean of Logged Detects		-1.363				SD of Logged Detects		2.278
808												
809	**Normal GOF Test on Detects Only**											
810				Shapiro Wilk Test Statistic		0.45	**Normal GOF Test on Detected Observations Only**					

811				5% Shapiro Wilk P Value		0	Detected Data Not Normal at 5% Significance Level					
812				Lilliefors Test Statistic		0.346	**Lilliefors GOF Test**					
813				5% Lilliefors Critical Value		0.103	Detected Data Not Normal at 5% Significance Level					
814	**Detected Data Not Normal at 5% Significance Level**											
815												
816	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
817				KM Mean		1.895	KM Standard Error of Mean					0.559
818				KM SD		4.935	95% KM (BCA) UCL					2.947
819				95% KM (t) UCL		2.826	95% KM (Percentile Bootstrap) UCL					2.888
820				95% KM (z) UCL		2.815	95% KM Bootstrap t UCL					3.638
821				90% KM Chebyshev UCL		3.573	95% KM Chebyshev UCL					4.332
822				97.5% KM Chebyshev UCL		5.387	99% KM Chebyshev UCL					7.458
823												
824	**Gamma GOF Tests on Detected Observations Only**											
825				A-D Test Statistic		2.469	**Anderson-Darling GOF Test**					
826				5% A-D Critical Value		0.859	Detected Data Not Gamma Distributed at 5% Significance Level					
827				K-S Test Statistic		0.15	**Kolmogorov-Smirnov GOF**					
828				5% K-S Critical Value		0.112	Detected Data Not Gamma Distributed at 5% Significance Level					
829	**Detected Data Not Gamma Distributed at 5% Significance Level**											
830												
831	**Gamma Statistics on Detected Data Only**											
832				k hat (MLE)		0.329	k star (bias corrected MLE)					0.324
833				Theta hat (MLE)		6.159	Theta star (bias corrected MLE)					6.24
834				nu hat (MLE)		48.62	nu star (bias corrected)					47.98
835				Mean (detects)		2.023						
836												
837	**Gamma ROS Statistics using Imputed Non-Detects**											
838	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
839	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
840	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
841	This is especially true when the sample size is small.											
842	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
843				Minimum		0.00358	Mean					1.896
844				Maximum		35.56	Median					0.216
845				SD		4.967	CV					2.62
846				k hat (MLE)		0.311	k star (bias corrected MLE)					0.307
847				Theta hat (MLE)		6.105	Theta star (bias corrected MLE)					6.172
848				nu hat (MLE)		49.06	nu star (bias corrected)					48.53
849				Adjusted Level of Significance (β)		0.047						
850				Approximate Chi Square Value (48.53, α)		33.54	Adjusted Chi Square Value (48.53, β)					33.31
851				95% Gamma Approximate UCL (use when n>=50)		2.743	95% Gamma Adjusted UCL (use when n<50)					2.762
852												
853	**Estimates of Gamma Parameters using KM Estimates**											
854				Mean (KM)		1.895	SD (KM)					4.935
855				Variance (KM)		24.36	SE of Mean (KM)					0.559
856				k hat (KM)		0.147	k star (KM)					0.15
857				nu hat (KM)		23.3	nu star (KM)					23.75
858				theta hat (KM)		12.85	theta star (KM)					12.61
859				80% gamma percentile (KM)		2.067	90% gamma percentile (KM)					5.622
860				95% gamma percentile (KM)		10.43	99% gamma percentile (KM)					24.37
861												
862	**Gamma Kaplan-Meier (KM) Statistics**											
863				Approximate Chi Square Value (23.75, α)		13.66	Adjusted Chi Square Value (23.75, β)					13.52
864				95% Gamma Approximate KM-UCL (use when n>=50)		3.296	95% Gamma Adjusted KM-UCL (use when n<50)					3.33

865												
866	**Lognormal GOF Test on Detected Observations Only**											
867					Shapiro Wilk Approximate Test Statistic		0.967	**Shapiro Wilk GOF Test**				
868					5% Shapiro Wilk P Value		0.156	Detected Data appear Lognormal at 5% Significance Level				
869					Lilliefors Test Statistic		0.0633	**Lilliefors GOF Test**				
870					5% Lilliefors Critical Value		0.103	Detected Data appear Lognormal at 5% Significance Level				
871	**Detected Data appear Lognormal at 5% Significance Level**											
872												
873	**Lognormal ROS Statistics Using Imputed Non-Detects**											
874					Mean in Original Scale		1.895	Mean in Log Scale				-1.683
875					SD in Original Scale		4.967	SD in Log Scale				2.535
876					95% t UCL (assumes normality of ROS data)		2.826	95% Percentile Bootstrap UCL				2.856
877					95% BCA Bootstrap UCL		3.271	95% Bootstrap t UCL				3.494
878					95% H-UCL (Log ROS)		15.19					
879												
880	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
881					KM Mean (logged)		-1.657	KM Geo Mean				0.191
882					KM SD (logged)		2.467	95% Critical H Value (KM-Log)				4.058
883					KM Standard Error of Mean (logged)		0.28	95% H-UCL (KM -Log)				12.41
884					KM SD (logged)		2.467	95% Critical H Value (KM-Log)				4.058
885					KM Standard Error of Mean (logged)		0.28					
886												
887	**DL/2 Statistics**											
888					**DL/2 Normal**			**DL/2 Log-Transformed**				
889					Mean in Original Scale		1.895	Mean in Log Scale				-1.682
890					SD in Original Scale		4.967	SD in Log Scale				2.531
891					95% t UCL (Assumes normality)		2.826	95% H-Stat UCL				15.04
892	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
893												
894	**Nonparametric Distribution Free UCL Statistics**											
895	**Detected Data appear Lognormal Distributed at 5% Significance Level**											
896												
897	**Suggested UCL to Use**											
898					KM H-UCL		12.41					
899												
900	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
901	Recommendations are based upon data size, data distribution, and skewness.											
902	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
903	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
904												
905	**BaP TEQ _Zero for ND**											
906												
907	**General Statistics**											
908					Total Number of Observations		79	Number of Distinct Observations				77
909					Number of Detects		74	Number of Non-Detects				5
910					Number of Distinct Detects		74	Number of Distinct Non-Detects				3
911					Minimum Detect		0.00266	Minimum Non-Detect				0
912					Maximum Detect		35.53	Maximum Non-Detect				0.00463
913					Variance Detects		25.97	Percent Non-Detects				6.329%
914					Mean Detects		2.01	SD Detects				5.096
915					Median Detects		0.244	CV Detects				2.536
916					Skewness Detects		4.659	Kurtosis Detects				26.37
917												
918	**Normal GOF Test on Detects Only**											

	A	B	C	D	E	F	G	H	I	J	K	L
919				Shapiro Wilk Test Statistic		0.448	**Normal GOF Test on Detected Observations Only**					
920				5% Shapiro Wilk P Value		0	Detected Data Not Normal at 5% Significance Level					
921				Lilliefors Test Statistic		0.347	**Lilliefors GOF Test**					
922				5% Lilliefors Critical Value		0.103	Detected Data Not Normal at 5% Significance Level					
923	**Detected Data Not Normal at 5% Significance Level**											
924												
925	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
926				KM Mean		1.883	KM Standard Error of Mean					0.558
927				KM SD		4.923	95% KM (BCA) UCL					2.954
928				95% KM (t) UCL		2.811	95% KM (Percentile Bootstrap) UCL					2.817
929				95% KM (z) UCL		2.8	95% KM Bootstrap t UCL					3.545
930				90% KM Chebyshev UCL		3.555	95% KM Chebyshev UCL					4.313
931				97.5% KM Chebyshev UCL		5.365	99% KM Chebyshev UCL					7.431
932												
933	**Gamma GOF Tests on Detected Observations Only**											
934				A-D Test Statistic		2.349	**Anderson-Darling GOF Test**					
935				5% A-D Critical Value		0.86	Detected Data Not Gamma Distributed at 5% Significance Level					
936				K-S Test Statistic		0.148	**Kolmogorov-Smirnov GOF**					
937				5% K-S Critical Value		0.112	Detected Data Not Gamma Distributed at 5% Significance Level					
938	**Detected Data Not Gamma Distributed at 5% Significance Level**											
939												
940	**Gamma Statistics on Detected Data Only**											
941				k hat (MLE)		0.323	k star (bias corrected MLE)					0.319
942				Theta hat (MLE)		6.219	Theta star (bias corrected MLE)					6.299
943				nu hat (MLE)		47.83	nu star (bias corrected)					47.22
944				Mean (detects)		2.01						
945												
946	**Estimates of Gamma Parameters using KM Estimates**											
947				Mean (KM)		1.883	SD (KM)					4.923
948				Variance (KM)		24.23	SE of Mean (KM)					0.558
949				k hat (KM)		0.146	k star (KM)					0.149
950				nu hat (KM)		23.11	nu star (KM)					23.56
951				theta hat (KM)		12.87	theta star (KM)					12.62
952				80% gamma percentile (KM)		2.039	90% gamma percentile (KM)					5.578
953				95% gamma percentile (KM)		10.37	99% gamma percentile (KM)					24.31
954												
955	**Gamma Kaplan-Meier (KM) Statistics**											
956							Adjusted Level of Significance (β)					0.047
957				Approximate Chi Square Value (23.56, α)		13.52	Adjusted Chi Square Value (23.56, β)					13.37
958				95% Gamma Approximate KM-UCL (use when n>=50)		3.282	95% Gamma Adjusted KM-UCL (use when n<50)					3.317
959												
960	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
961				KM Mean (logged)		N/A	KM Geo Mean					N/A
962				KM SD (logged)		N/A	95% Critical H Value (KM-Log)					N/A
963				KM Standard Error of Mean (logged)		N/A	95% H-UCL (KM -Log)					N/A
964				KM SD (logged)		N/A	95% Critical H Value (KM-Log)					N/A
965				KM Standard Error of Mean (logged)		N/A						
966												
967	**DL/2 Statistics**											
968				Mean in Original Scale		1.883	SD in Original Scale					4.954
969				95% t UCL (Assumes normality)		2.81						
970	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
971												
972	**Nonparametric Distribution Free UCL Statistics**											

	A	B	C	D	E	F	G	H	I	J	K	L
973	**Data do not follow a Discernible Distribution at 5% Significance Level**											
974												
975	**Suggested UCL to Use**											
976					99% KM (Chebyshev) UCL	7.431						
977												
978	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
979	Recommendations are based upon data size, data distribution, and skewness.											
980	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
981	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
982												

Attachment 11

ProUCL Outputs for Surface and Subsurface Soil (0-15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.112/4/2019 5:08:52 PM
From File	ProUCL_Input_Soil_0-15_Offsite.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Total Number of Observations	39	Number of Distinct Observations	37
		Number of Missing Observations	0
Minimum	7.22	Mean	14.34
Maximum	25.8	Median	14.6
SD	5.343	Std. Error of Mean	0.856
Coefficient of Variation	0.373	Skewness	0.453

Normal GOF Test

Shapiro Wilk Test Statistic	0.914	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.939	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.162	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.14	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.78	95% Adjusted-CLT UCL (Chen-1995)	15.81
		95% Modified-t UCL (Johnson-1978)	15.79

Gamma GOF Test

A-D Test Statistic	0.961	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.75	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.163	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.141	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	7.444	k star (bias corrected MLE)	6.888
Theta hat (MLE)	1.926	Theta star (bias corrected MLE)	2.081
nu hat (MLE)	580.6	nu star (bias corrected)	537.3
MLE Mean (bias corrected)	14.34	MLE Sd (bias corrected)	5.462
		Approximate Chi Square Value (0.05)	484.5
Adjusted Level of Significance	0.0437	Adjusted Chi Square Value	482.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	15.9	95% Adjusted Gamma UCL (use when n<50)	15.96

55	**Lognormal GOF Test**											
56					Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk Lognormal GOF Test**					
57					5% Shapiro Wilk Critical Value	0.939	Data Not Lognormal at 5% Significance Level					
58					Lilliefors Test Statistic	0.156	**Lilliefors Lognormal GOF Test**					
59					5% Lilliefors Critical Value	0.14	Data Not Lognormal at 5% Significance Level					
60	**Data Not Lognormal at 5% Significance Level**											
61												
62	**Lognormal Statistics**											
63					Minimum of Logged Data	1.977	Mean of logged Data	2.594				
64					Maximum of Logged Data	3.25	SD of logged Data	0.378				
65												
66	**Assuming Lognormal Distribution**											
67					95% H-UCL	16.08	90% Chebyshev (MVUE) UCL	17.02				
68					95% Chebyshev (MVUE) UCL	18.24	97.5% Chebyshev (MVUE) UCL	19.92				
69					99% Chebyshev (MVUE) UCL	23.22						
70												
71	**Nonparametric Distribution Free UCL Statistics**											
72	**Data do not follow a Discernible Distribution (0.05)**											
73												
74	**Nonparametric Distribution Free UCLs**											
75					95% CLT UCL	15.74	95% Jackknife UCL	15.78				
76					95% Standard Bootstrap UCL	15.72	95% Bootstrap-t UCL	15.9				
77					95% Hall's Bootstrap UCL	15.76	95% Percentile Bootstrap UCL	15.8				
78					95% BCA Bootstrap UCL	15.93						
79					90% Chebyshev(Mean, Sd) UCL	16.9	95% Chebyshev(Mean, Sd) UCL	18.06				
80					97.5% Chebyshev(Mean, Sd) UCL	19.68	99% Chebyshev(Mean, Sd) UCL	22.85				
81												
82	**Suggested UCL to Use**											
83					95% Student's-t UCL	15.78	or 95% Modified-t UCL	15.79				
84												
85	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
86	Recommendations are based upon data size, data distribution, and skewness.											
87	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
88	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
89												
90												
91	**Chromium**											
92												
93	**General Statistics**											
94					Total Number of Observations	39	Number of Distinct Observations	33				
95							Number of Missing Observations	0				
96					Minimum	6.16	Mean	10.95				
97					Maximum	22.6	Median	10.3				
98					SD	3.308	Std. Error of Mean	0.53				
99					Coefficient of Variation	0.302	Skewness	1.496				
100												
101	**Normal GOF Test**											
102					Shapiro Wilk Test Statistic	0.893	**Shapiro Wilk GOF Test**					
103					5% Shapiro Wilk Critical Value	0.939	Data Not Normal at 5% Significance Level					
104					Lilliefors Test Statistic	0.168	**Lilliefors GOF Test**					
105					5% Lilliefors Critical Value	0.14	Data Not Normal at 5% Significance Level					
106	**Data Not Normal at 5% Significance Level**											
107												
108	**Assuming Normal Distribution**											

109	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
110				95% Student's-t UCL		11.84				95% Adjusted-CLT UCL (Chen-1995)		11.96
111										95% Modified-t UCL (Johnson-1978)		11.87
112												
113	**Gamma GOF Test**											
114				A-D Test Statistic		0.538	**Anderson-Darling Gamma GOF Test**					
115				5% A-D Critical Value		0.748	Detected data appear Gamma Distributed at 5% Significance Level					
116				K-S Test Statistic		0.127	**Kolmogorov-Smirnov Gamma GOF Test**					
117				5% K-S Critical Value		0.141	Detected data appear Gamma Distributed at 5% Significance Level					
118	**Detected data appear Gamma Distributed at 5% Significance Level**											
119												
120	**Gamma Statistics**											
121				k hat (MLE)		13.07				k star (bias corrected MLE)		12.08
122				Theta hat (MLE)		0.838				Theta star (bias corrected MLE)		0.907
123				nu hat (MLE)		1019				nu star (bias corrected)		942.1
124				MLE Mean (bias corrected)		10.95				MLE Sd (bias corrected)		3.151
125										Approximate Chi Square Value (0.05)		871.8
126				Adjusted Level of Significance		0.0437				Adjusted Chi Square Value		869.2
127												
128	**Assuming Gamma Distribution**											
129				95% Approximate Gamma UCL (use when n>=50)		11.83				95% Adjusted Gamma UCL (use when n<50)		11.87
130												
131	**Lognormal GOF Test**											
132				Shapiro Wilk Test Statistic		0.975	**Shapiro Wilk Lognormal GOF Test**					
133				5% Shapiro Wilk Critical Value		0.939	Data appear Lognormal at 5% Significance Level					
134				Lilliefors Test Statistic		0.109	**Lilliefors Lognormal GOF Test**					
135				5% Lilliefors Critical Value		0.14	Data appear Lognormal at 5% Significance Level					
136	**Data appear Lognormal at 5% Significance Level**											
137												
138	**Lognormal Statistics**											
139				Minimum of Logged Data		1.818				Mean of logged Data		2.355
140				Maximum of Logged Data		3.118				SD of logged Data		0.275
141												
142	**Assuming Lognormal Distribution**											
143				95% H-UCL		11.84				90% Chebyshev (MVUE) UCL		12.4
144				95% Chebyshev (MVUE) UCL		13.06				97.5% Chebyshev (MVUE) UCL		13.99
145				99% Chebyshev (MVUE) UCL		15.8						
146												
147	**Nonparametric Distribution Free UCL Statistics**											
148	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
149												
150	**Nonparametric Distribution Free UCLs**											
151				95% CLT UCL		11.82				95% Jackknife UCL		11.84
152				95% Standard Bootstrap UCL		11.77				95% Bootstrap-t UCL		12.04
153				95% Hall's Bootstrap UCL		12.09				95% Percentile Bootstrap UCL		11.86
154				95% BCA Bootstrap UCL		11.89						
155				90% Chebyshev(Mean, Sd) UCL		12.54				95% Chebyshev(Mean, Sd) UCL		13.26
156				97.5% Chebyshev(Mean, Sd) UCL		14.26				99% Chebyshev(Mean, Sd) UCL		16.22
157												
158	**Suggested UCL to Use**											
159				95% Adjusted Gamma UCL		11.87						
160												
161	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
162	Recommendations are based upon data size, data distribution, and skewness.											

	A	B	C	D	E	F	G	H	I	J	K	L
163	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
164	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
165												

Attachment 12

ProUCL Outputs for Deep Soil (> 15 feet) - Onsite

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.112/4/2019 5:10:22 PM
From File	ProUCL_Input_Soil_MoreThan15_Onsite.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Chromium

General Statistics

Total Number of Observations	27	Number of Distinct Observations	25
		Number of Missing Observations	0
Minimum	3.78	Mean	24.54
Maximum	129	Median	19.5
SD	23.82	Std. Error of Mean	4.585
Coefficient of Variation	0.971	Skewness	3.449

Normal GOF Test

Shapiro Wilk Test Statistic	0.644	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.221	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.36	95% Adjusted-CLT UCL (Chen-1995)	35.33
		95% Modified-t UCL (Johnson-1978)	32.86

Gamma GOF Test

A-D Test Statistic	0.512	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.758	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.13	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.171	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.909	k star (bias corrected MLE)	1.722
Theta hat (MLE)	12.85	Theta star (bias corrected MLE)	14.25
nu hat (MLE)	103.1	nu star (bias corrected)	92.97
MLE Mean (bias corrected)	24.54	MLE Sd (bias corrected)	18.7
		Approximate Chi Square Value (0.05)	71.73
Adjusted Level of Significance	0.0401	Adjusted Chi Square Value	70.54

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	31.8	95% Adjusted Gamma UCL (use when n<50)	32.34

Lognormal GOF Test

55	Shapiro Wilk Test Statistic				0.976	**Shapiro Wilk Lognormal GOF Test**						
56	5% Shapiro Wilk Critical Value				0.923	Data appear Lognormal at 5% Significance Level						
57	Lilliefors Test Statistic				0.11	**Lilliefors Lognormal GOF Test**						
58	5% Lilliefors Critical Value				0.167	Data appear Lognormal at 5% Significance Level						
59	**Data appear Lognormal at 5% Significance Level**											
60												
61	**Lognormal Statistics**											
62	Minimum of Logged Data				1.33	Mean of logged Data					2.916	
63	Maximum of Logged Data				4.86	SD of logged Data					0.748	
64												
65	**Assuming Lognormal Distribution**											
66	95% H-UCL				33.79	90% Chebyshev (MVUE) UCL					35.44	
67	95% Chebyshev (MVUE) UCL				40.57	97.5% Chebyshev (MVUE) UCL					47.69	
68	99% Chebyshev (MVUE) UCL				61.67							
69												
70	**Nonparametric Distribution Free UCL Statistics**											
71	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
72												
73	**Nonparametric Distribution Free UCLs**											
74	95% CLT UCL				32.08	95% Jackknife UCL					32.36	
75	95% Standard Bootstrap UCL				31.89	95% Bootstrap-t UCL					39.28	
76	95% Hall's Bootstrap UCL				64.8	95% Percentile Bootstrap UCL					32.5	
77	95% BCA Bootstrap UCL				35.82							
78	90% Chebyshev(Mean, Sd) UCL				38.29	95% Chebyshev(Mean, Sd) UCL					44.52	
79	97.5% Chebyshev(Mean, Sd) UCL				53.17	99% Chebyshev(Mean, Sd) UCL					70.16	
80												
81	**Suggested UCL to Use**											
82	95% Adjusted Gamma UCL				32.34							
83												
84	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
85	Recommendations are based upon data size, data distribution, and skewness.											
86	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
87	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
88	**As**											
89												
90	**General Statistics**											
91	Total Number of Observations				27	Number of Distinct Observations					25	
92						Number of Missing Observations					0	
93	Minimum				4.16	Mean					14.83	
94	Maximum				24.5	Median					16.4	
95	SD				5.788	Std. Error of Mean					1.114	
96	Coefficient of Variation				0.39	Skewness					-0.234	
97												
98	**Normal GOF Test**											
99	Shapiro Wilk Test Statistic				0.944	**Shapiro Wilk GOF Test**						
100	5% Shapiro Wilk Critical Value				0.923	Data appear Normal at 5% Significance Level						
101	Lilliefors Test Statistic				0.2	**Lilliefors GOF Test**						
102	5% Lilliefors Critical Value				0.167	Data Not Normal at 5% Significance Level						
103	**Data appear Approximate Normal at 5% Significance Level**											
104												
105	**Assuming Normal Distribution**											
106	**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**						
107	95% Student's-t UCL				16.73	95% Adjusted-CLT UCL (Chen-1995)					16.6	
108						95% Modified-t UCL (Johnson-1978)					16.72	

109												
110	**Gamma GOF Test**											
111				A-D Test Statistic	0.932	**Anderson-Darling Gamma GOF Test**						
112				5% A-D Critical Value	0.747	Data Not Gamma Distributed at 5% Significance Level						
113				K-S Test Statistic	0.241	**Kolmogorov-Smirnov Gamma GOF Test**						
114				5% K-S Critical Value	0.169	Data Not Gamma Distributed at 5% Significance Level						
115	**Data Not Gamma Distributed at 5% Significance Level**											
116												
117	**Gamma Statistics**											
118				k hat (MLE)	5.491	k star (bias corrected MLE)	4.905					
119				Theta hat (MLE)	2.7	Theta star (bias corrected MLE)	3.023					
120				nu hat (MLE)	296.5	nu star (bias corrected)	264.9					
121				MLE Mean (bias corrected)	14.83	MLE Sd (bias corrected)	6.694					
122						Approximate Chi Square Value (0.05)	228.2					
123				Adjusted Level of Significance	0.0401	Adjusted Chi Square Value	226					
124												
125	**Assuming Gamma Distribution**											
126				95% Approximate Gamma UCL (use when n>=50))	17.21	95% Adjusted Gamma UCL (use when n<50)	17.38					
127												
128	**Lognormal GOF Test**											
129				Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk Lognormal GOF Test**						
130				5% Shapiro Wilk Critical Value	0.923	Data Not Lognormal at 5% Significance Level						
131				Lilliefors Test Statistic	0.252	**Lilliefors Lognormal GOF Test**						
132				5% Lilliefors Critical Value	0.167	Data Not Lognormal at 5% Significance Level						
133	**Data Not Lognormal at 5% Significance Level**											
134												
135	**Lognormal Statistics**											
136				Minimum of Logged Data	1.426	Mean of logged Data	2.603					
137				Maximum of Logged Data	3.199	SD of logged Data	0.474					
138												
139	**Assuming Lognormal Distribution**											
140				95% H-UCL	18.1	90% Chebyshev (MVUE) UCL	19.31					
141				95% Chebyshev (MVUE) UCL	21.24	97.5% Chebyshev (MVUE) UCL	23.93					
142				99% Chebyshev (MVUE) UCL	29.21							
143												
144	**Nonparametric Distribution Free UCL Statistics**											
145	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
146												
147	**Nonparametric Distribution Free UCLs**											
148				95% CLT UCL	16.66	95% Jackknife UCL	16.73					
149				95% Standard Bootstrap UCL	16.58	95% Bootstrap-t UCL	16.68					
150				95% Hall's Bootstrap UCL	16.56	95% Percentile Bootstrap UCL	16.58					
151				95% BCA Bootstrap UCL	16.62							
152				90% Chebyshev(Mean, Sd) UCL	18.17	95% Chebyshev(Mean, Sd) UCL	19.68					
153				97.5% Chebyshev(Mean, Sd) UCL	21.78	99% Chebyshev(Mean, Sd) UCL	25.91					
154												
155	**Suggested UCL to Use**											
156				95% Student's-t UCL	16.73							
157												
158	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
159	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
160												
161	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
162	Recommendations are based upon data size, data distribution, and skewness.											

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BaP TEQ Half RL for ND

General Statistics

Total Number of Observations	35	Number of Distinct Observations	29
		Number of Missing Observations	0
Minimum	0.00192	Mean	0.239
Maximum	3.4	Median	0.0295
SD	0.655	Std. Error of Mean	0.111
Coefficient of Variation	2.738	Skewness	4.025

Normal GOF Test

Shapiro Wilk Test Statistic	0.406	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.384	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.148	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.427	95% Adjusted-CLT UCL (Chen-1995)	0.502
		95% Modified-t UCL (Johnson-1978)	0.439

Gamma GOF Test

A-D Test Statistic	2.088	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.852	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.205	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.161	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.322	k star (bias corrected MLE)	0.313
Theta hat (MLE)	0.744	Theta star (bias corrected MLE)	0.765
nu hat (MLE)	22.51	nu star (bias corrected)	21.91
MLE Mean (bias corrected)	0.239	MLE Sd (bias corrected)	0.428
		Approximate Chi Square Value (0.05)	12.27
Adjusted Level of Significance	0.0425	Adjusted Chi Square Value	11.93

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.427	95% Adjusted Gamma UCL (use when n<50)	0.44

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.922	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.124	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.148	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

217				Minimum of Logged Data	-6.256				Mean of logged Data	-3.55		
218				Maximum of Logged Data	1.224				SD of logged Data	2.153		
219												
220	**Assuming Lognormal Distribution**											
221				95% H-UCL	1.341				90% Chebyshev (MVUE) UCL	0.611		
222				95% Chebyshev (MVUE) UCL	0.779				97.5% Chebyshev (MVUE) UCL	1.011		
223				99% Chebyshev (MVUE) UCL	1.468							
224												
225	**Nonparametric Distribution Free UCL Statistics**											
226	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
227												
228	**Nonparametric Distribution Free UCLs**											
229				95% CLT UCL	0.422				95% Jackknife UCL	0.427		
230				95% Standard Bootstrap UCL	0.418				95% Bootstrap-t UCL	0.818		
231				95% Hall's Bootstrap UCL	0.948				95% Percentile Bootstrap UCL	0.435		
232				95% BCA Bootstrap UCL	0.535							
233				90% Chebyshev(Mean, Sd) UCL	0.572				95% Chebyshev(Mean, Sd) UCL	0.722		
234				97.5% Chebyshev(Mean, Sd) UCL	0.931				99% Chebyshev(Mean, Sd) UCL	1.342		
235												
236	**Suggested UCL to Use**											
237				97.5% Chebyshev (Mean, Sd) UCL	0.931							
238												
239	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
240	Recommendations are based upon data size, data distribution, and skewness.											
241	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
242	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
243												
244												
245	**BaP TEQ Zero for ND**											
246												
247	**General Statistics**											
248				Total Number of Observations	35				Number of Distinct Observations	28		
249									Number of Missing Observations	0		
250				Minimum	0				Mean	0.237		
251				Maximum	3.383				Median	0.0286		
252				SD	0.653				Std. Error of Mean	0.11		
253				Coefficient of Variation	2.752				Skewness	4.022		
254												
255	**Normal GOF Test**											
256				Shapiro Wilk Test Statistic	0.406				**Shapiro Wilk GOF Test**			
257				5% Shapiro Wilk Critical Value	0.934				Data Not Normal at 5% Significance Level			
258				Lilliefors Test Statistic	0.388				**Lilliefors GOF Test**			
259				5% Lilliefors Critical Value	0.148				Data Not Normal at 5% Significance Level			
260	**Data Not Normal at 5% Significance Level**											
261												
262	**Assuming Normal Distribution**											
263	**95% Normal UCL**								**95% UCLs (Adjusted for Skewness)**			
264				95% Student's-t UCL	0.424				95% Adjusted-CLT UCL (Chen-1995)	0.499		
265									95% Modified-t UCL (Johnson-1978)	0.436		
266	**Gamma Statistics Not Available**											
267	**Lognormal Statistics Not Available**											
268												
269	**Nonparametric Distribution Free UCL Statistics**											
270	**Data do not follow a Discernible Distribution (0.05)**											

	A	B	C	D	E	F	G	H	I	J	K	L
271												
272	**Nonparametric Distribution Free UCLs**											
273					95% CLT UCL	0.419			95% Jackknife UCL	0.424		
274					95% Standard Bootstrap UCL	0.408			95% Bootstrap-t UCL	0.802		
275					95% Hall's Bootstrap UCL	0.945			95% Percentile Bootstrap UCL	0.434		
276					95% BCA Bootstrap UCL	0.518						
277					90% Chebyshev(Mean, Sd) UCL	0.568			95% Chebyshev(Mean, Sd) UCL	0.718		
278					97.5% Chebyshev(Mean, Sd) UCL	0.927			99% Chebyshev(Mean, Sd) UCL	1.335		
279												
280	**Suggested UCL to Use**											
281					95% Chebyshev (Mean, Sd) UCL	0.718						
282												
283	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
284	Recommendations are based upon data size, data distribution, and skewness.											
285	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
286	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
287												

Attachment 13

ProUCL Outputs for Deep Soil (> 15 feet) - Background (Offsite)

Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.112/4/2019 5:11:44 PM
From File	ProUCL_Input_Soil_MoreThan15_Offsite.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Total Number of Observations	22	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	8.59	Mean	15.79
Maximum	32.6	Median	14.65
SD	5.799	Std. Error of Mean	1.236
Coefficient of Variation	0.367	Skewness	1.268

Normal GOF Test

Shapiro Wilk Test Statistic	0.905	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.167	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.184	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.92	95% Adjusted-CLT UCL (Chen-1995)	18.18
		95% Modified-t UCL (Johnson-1978)	17.97

Gamma GOF Test

A-D Test Statistic	0.279	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.744	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.121	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.185	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	8.817	k star (bias corrected MLE)	7.645
Theta hat (MLE)	1.791	Theta star (bias corrected MLE)	2.065
nu hat (MLE)	388	nu star (bias corrected)	336.4
MLE Mean (bias corrected)	15.79	MLE Sd (bias corrected)	5.71
		Approximate Chi Square Value (0.05)	294.9
Adjusted Level of Significance	0.0386	Adjusted Chi Square Value	292

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	18.01	95% Adjusted Gamma UCL (use when n<50)	18.19

55	**Lognormal GOF Test**											
56					Shapiro Wilk Test Statistic	0.975	**Shapiro Wilk Lognormal GOF Test**					
57					5% Shapiro Wilk Critical Value	0.911	Data appear Lognormal at 5% Significance Level					
58					Lilliefors Test Statistic	0.0995	**Lilliefors Lognormal GOF Test**					
59					5% Lilliefors Critical Value	0.184	Data appear Lognormal at 5% Significance Level					
60	**Data appear Lognormal at 5% Significance Level**											
61												
62	**Lognormal Statistics**											
63					Minimum of Logged Data	2.151	Mean of logged Data	2.702				
64					Maximum of Logged Data	3.484	SD of logged Data	0.342				
65												
66	**Assuming Lognormal Distribution**											
67					95% H-UCL	18.16	90% Chebyshev (MVUE) UCL	19.27				
68					95% Chebyshev (MVUE) UCL	20.86	97.5% Chebyshev (MVUE) UCL	23.06				
69					99% Chebyshev (MVUE) UCL	27.4						
70												
71	**Nonparametric Distribution Free UCL Statistics**											
72	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
73												
74	**Nonparametric Distribution Free UCLs**											
75					95% CLT UCL	17.82	95% Jackknife UCL	17.92				
76					95% Standard Bootstrap UCL	17.74	95% Bootstrap-t UCL	18.66				
77					95% Hall's Bootstrap UCL	18.96	95% Percentile Bootstrap UCL	17.76				
78					95% BCA Bootstrap UCL	18.11						
79					90% Chebyshev(Mean, Sd) UCL	19.5	95% Chebyshev(Mean, Sd) UCL	21.18				
80					97.5% Chebyshev(Mean, Sd) UCL	23.51	99% Chebyshev(Mean, Sd) UCL	28.09				
81												
82	**Suggested UCL to Use**											
83					95% Student's-t UCL	17.92						
84												
85	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
86	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
87												
88	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
89	Recommendations are based upon data size, data distribution, and skewness.											
90	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
91	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
92												
93												
94	**Chromium**											
95												
96	**General Statistics**											
97					Total Number of Observations	22	Number of Distinct Observations	20				
98							Number of Missing Observations	0				
99					Minimum	5.12	Mean	14.64				
100					Maximum	63	Median	12.55				
101					SD	11.58	Std. Error of Mean	2.47				
102					Coefficient of Variation	0.791	Skewness	3.733				
103												
104	**Normal GOF Test**											
105					Shapiro Wilk Test Statistic	0.553	**Shapiro Wilk GOF Test**					
106					5% Shapiro Wilk Critical Value	0.911	Data Not Normal at 5% Significance Level					
107					Lilliefors Test Statistic	0.306	**Lilliefors GOF Test**					
108					5% Lilliefors Critical Value	0.184	Data Not Normal at 5% Significance Level					

109	**Data Not Normal at 5% Significance Level**											
110												
111	**Assuming Normal Distribution**											
112	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
113				95% Student's-t UCL		18.89			95% Adjusted-CLT UCL (Chen-1995)			20.8
114									95% Modified-t UCL (Johnson-1978)			19.22
115												
116	**Gamma GOF Test**											
117				A-D Test Statistic		1.397	**Anderson-Darling Gamma GOF Test**					
118				5% A-D Critical Value		0.749	Data Not Gamma Distributed at 5% Significance Level					
119				K-S Test Statistic		0.231	**Kolmogorov-Smirnov Gamma GOF Test**					
120				5% K-S Critical Value		0.187	Data Not Gamma Distributed at 5% Significance Level					
121	**Data Not Gamma Distributed at 5% Significance Level**											
122												
123	**Gamma Statistics**											
124				k hat (MLE)		3.308			k star (bias corrected MLE)			2.888
125				Theta hat (MLE)		4.425			Theta star (bias corrected MLE)			5.07
126				nu hat (MLE)		145.6			nu star (bias corrected)			127.1
127				MLE Mean (bias corrected)		14.64			MLE Sd (bias corrected)			8.615
128									Approximate Chi Square Value (0.05)			102
129				Adjusted Level of Significance		0.0386			Adjusted Chi Square Value			100.3
130												
131	**Assuming Gamma Distribution**											
132				95% Approximate Gamma UCL (use when n>=50))		18.23			95% Adjusted Gamma UCL (use when n<50)			18.54
133												
134	**Lognormal GOF Test**											
135				Shapiro Wilk Test Statistic		0.88	**Shapiro Wilk Lognormal GOF Test**					
136				5% Shapiro Wilk Critical Value		0.911	Data Not Lognormal at 5% Significance Level					
137				Lilliefors Test Statistic		0.186	**Lilliefors Lognormal GOF Test**					
138				5% Lilliefors Critical Value		0.184	Data Not Lognormal at 5% Significance Level					
139	**Data Not Lognormal at 5% Significance Level**											
140												
141	**Lognormal Statistics**											
142				Minimum of Logged Data		1.633			Mean of logged Data			2.525
143				Maximum of Logged Data		4.143			SD of logged Data			0.521
144												
145	**Assuming Lognormal Distribution**											
146				95% H-UCL		18			90% Chebyshev (MVUE) UCL			19.15
147				95% Chebyshev (MVUE) UCL		21.38			97.5% Chebyshev (MVUE) UCL			24.49
148				99% Chebyshev (MVUE) UCL		30.58						
149												
150	**Nonparametric Distribution Free UCL Statistics**											
151	**Data do not follow a Discernible Distribution (0.05)**											
152												
153	**Nonparametric Distribution Free UCLs**											
154				95% CLT UCL		18.7			95% Jackknife UCL			18.89
155				95% Standard Bootstrap UCL		18.53			95% Bootstrap-t UCL			24.8
156				95% Hall's Bootstrap UCL		36.23			95% Percentile Bootstrap UCL			19.3
157				95% BCA Bootstrap UCL		20.82						
158				90% Chebyshev(Mean, Sd) UCL		22.05			95% Chebyshev(Mean, Sd) UCL			25.4
159				97.5% Chebyshev(Mean, Sd) UCL		30.06			99% Chebyshev(Mean, Sd) UCL			39.21
160												
161	**Suggested UCL to Use**											
162				95% Chebyshev (Mean, Sd) UCL		25.4						

	A	B	C	D	E	F	G	H	I	J	K	L
163												
164	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
165	Recommendations are based upon data size, data distribution, and skewness.											
166	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
167	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
168												

Attachment 14
Risk Calculations for Soil Waste Characterization Results for Cyanide
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Douglas, Arizona

Sample ID			D-B11-1.0-1.5	D-B11-2.5-3.0*	D-B12-1.0-1.5	D-B12-5.0-5.5	D-B12-7.5-8.0*	D-B13-2.5-3.0	D-B14-1.0-1.5	D-B15-5.0-5.5	D-B16-2.5-3.0	D-B17-5.0-5.5
Sample Depth (ft bgs)			**1.0-1.5**	**2.5-3.0**	**1.0-1.5**	**5.0-5.5**	**7.5-8.0**	**2.5-3.0**	**1.0-1.5**	**5.0-5.5**	**2.5-3.0**	**5.0-5.5**
Sample Date			**30-Oct-19**	**30-Oct-19**	**31-Oct-19**	**31-Oct-19**	**31-Oct-19**	**31-Oct-19**	**29-Oct-19**	**01-Nov-19**	**29-Oct-19**	**30-Oct-19**
Analyte	CAS #	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Cyanide, Total	57-12-5	MG/KG	**0.65**	--	0.0588U	**0.19**	--	**0.0668J**	0.0554U	0.0601U	**0.144**	**0.204**

Attachment 14
Risk Calculations for Soil Waste Characterization Results for Cyanide
Human Health Risk Assessment, Former Manufactured Gas Plant Site, Dou

Sample ID			D-B19-2.5-3.0	D-B21-2.5-3.0	D-B25-0-102719	D-B25-2.5-3.0	D-B28-5.0-5.5	D-B29-5.0-5.5	D-B30-5.0-5.5	D-B35-5.0-5.5	Maximum Detected Result	Residential RSL (TR = 1E-05) (THQ = 1)	Industrial RSL (TR = 1E-05) (THQ = 1)	Residential ELCR	Residential HQ	Industrial ELCR	Industrial HQ
Sample Depth (ft bgs)			**2.5-3.0**	**2.5-3.0**	**0-0.25**	**2.5-3.0**	**5.0-5.5**	**5.0-5.5**	**5.0-5.5**	**5.0-5.5**							
Sample Date			**01-Nov-19**	**01-Nov-19**	**27-Oct-19**	**30-Oct-19**	**29-Oct-19**	**07-Nov-19**	**01-Nov-19**	**28-Oct-19**							
Analyte	CAS #	Units	Result	Result	Result	Result	Result	Result	Result	Result							
Cyanide, Total	57-12-5	MG/KG	0.065U	**0.0715**	**0.0635**	0.0286U	0.0286U	0.0545UJ	0.0565U	0.0588U	0.65	23 N	150 N	--	0.03	--	0.004

Notes:

Cells highlighted in yellow indicate that the compound exceeded the Residential Soil Remediation Level only.

Cells highlighted in red indicate that the compound exceeded the Non-residential Soil Remediation Level only.

J = Analyte is present but the reported value might not be accurate or precise (estimate).

U = Analyte was not detected at the specified detection limit.

UJ = Analyte was not detected at the specified detection limit, detection limit is estimated.

ft bgs = foot (feet) below ground surface

ID = identification number

mg/kg = milligram(s) per kilogram

* = Locations added to waste characterization results

Appendix L
Groundwater Protection Level Modeling

1/1/2013

Model Inputs

			Calculation values	Data Enter	
Select chemical name from drop down list				Acenaphthene	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.006355		Compound-specific value (ADEQ, 2013)
S (water solubility, mg/l)			4.24		Compound-specific value (ADEQ, 2013)
Koc (L/Kg)			4898		Compound-specific value (ADEQ, 2013)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			10	10	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			370		Risk-based standard (ADEQ, 2013)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Acenaphthene

GPL (mg/kg) = 90330.52

Saturation conc. (mg/kg) 394.86

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	Acenaphthylene
Select chemical name from drop down list				Enter chemical properties	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.00451	0.00451	Compound-specific value (NJDEP, 2019)
S (water solubility, mg/l)			16	16	Compound-specific value (NJDEP, 2019)
Koc (L/Kg)			2760	2760	Compound-specific value (NJDEP, 2019)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			20	20	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			420	420	Risk-based standard (ADEQ, 1992)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Enter chemical properties

GPL (mg/kg) = 29102.17

Saturation conc. (mg/kg) 840.09

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	
Select chemical name from drop down list				Anthracene	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.002665		Compound-specific value (ADEQ, 2013)
S (water solubility, mg/l)			0.0434		Compound-specific value (ADEQ, 2013)
Koc (L/Kg)			23500		Compound-specific value (ADEQ, 2013)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			10	10	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			1800		Risk-based standard (ADEQ, 2013)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Anthracene

GPL (mg/kg) = 796424458.57

Saturation conc. (mg/kg) 19.38

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	Benzo(a)anthracene
Select chemical name from drop down list				Enter chemical properties	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.00049	0.00049	Compound-specific value (U.S. EPA, 2019)
S (water solubility, mg/l)			0.0094	0.0094	Compound-specific value (U.S. EPA, 2019)
Koc (L/Kg)			180000	180000	Compound-specific value (U.S. EPA, 2019)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			5	5	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			0.003	0.003	Health-based Guidance Level
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Enter chemical properties

GPL (mg/kg) = ###############

Saturation conc. (mg/kg) 32.15

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	
				Enter chemical properties	Benzo(a)pyrene
Select chemical name from drop down list					
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.000019	0.000019	Compound-specific value (U.S. EPA, 2019)
S (water solubility, mg/l)			0.0016	0.0016	Compound-specific value (U.S. EPA, 2019)
Koc (L/Kg)			590000	590000	Compound-specific value (U.S. EPA, 2019)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			10	10	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			0.2	0.2	Aquifer water quality standard
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Enter chemical properties

GPL (mg/kg) = ###############

Saturation conc. (mg/kg) 17.94

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	Benzo(b)fluoranthene
Select chemical name from drop down list				Enter chemical properties	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.000027	0.000027	Compound-specific value (U.S. EPA, 2019)
S (water solubility, mg/l)			0.0015	0.0015	Compound-specific value (U.S. EPA, 2019)
Koc (L/Kg)			600000	600000	Compound-specific value (U.S. EPA, 2019)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			10	10	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			0.003	0.003	Health-based Guidance Level
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Enter chemical properties

GPL (mg/kg) = ###############

Saturation conc. (mg/kg) 17.10

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	Benzo(k)fluoranthene
				Enter chemical properties	
Select chemical name from drop down list					
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.000024	0.000024	Compound-specific value (U.S. EPA, 2019)
S (water solubility, mg/l)			0.0008	0.0008	Compound-specific value (U.S. EPA, 2019)
Koc (L/Kg)			590000	590000	Compound-specific value (U.S. EPA, 2019)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			10	10	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			0.003	0.003	Health-based Guidance Level
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Enter chemical properties

GPL (mg/kg) = ###############

Saturation conc. (mg/kg) 8.97

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	
Select chemical name from drop down list				Chrysene	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.0038786		Compound-specific value (ADEQ, 2013)
S (water solubility, mg/l)			0.0016		Compound-specific value (ADEQ, 2013)
Koc (L/Kg)			398000		Compound-specific value (ADEQ, 2013)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
$Dg^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
$D1^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			0.5	0.5	Modified to capture peak liquid phase concentration
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			1.5		Risk-based standard (ADEQ, 2013)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Chrysene

GPL (mg/kg) = ###############

Saturation conc. (mg/kg) 12.10

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

		Calculation values	Data Enter	Dibenz(a,h)anthracene
Select chemical name from drop down list			Enter chemical properties	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)		1	1	
Kh (dimensionless)		0.0000708	0.0000708	Compound-specific value (ADEQ, 2013)
S (water solubility, mg/l)		0.0006	0.0006	Compound-specific value (ADEQ, 2013)
Koc (L/Kg)		1800000	1800000	Compound-specific value (ADEQ, 2013)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)	100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)	100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list			New Soil Type	2019 Field Measurements
Φ(total porosity)	(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)	(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)	(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)		0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)	(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content	(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)	(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)		2	2	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)		807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)		807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)		3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)		807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)	(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)	(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)	(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard		0.003	0.003	Risk-based standard (ADEQ, 2013)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)	(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)	(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Enter chemical properties

GPL (mg/kg) = ###############

Saturation conc. (mg/kg) 20.52

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	Fluoranthene
Select chemical name from drop down list				Enter chemical properties	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.00036	0.00036	Compound-specific value (U.S. EPA, 2019)
S (water solubility, mg/l)			0.26	0.26	Compound-specific value (U.S. EPA, 2019)
Koc (L/Kg)			55000	55000	Compound-specific value (U.S. EPA, 2019)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			10	10	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			280	280	Health-based Guidance Level
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Enter chemical properties

GPL (mg/kg) = ###############

Saturation conc. (mg/kg) 271.72

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	
Select chemical name from drop down list				Fluorene	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.003157		Compound-specific value (ADEQ, 2013)
S (water solubility, mg/l)			1.9		Compound-specific value (ADEQ, 2013)
Koc (L/Kg)			13800		Compound-specific value (ADEQ, 2013)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			10	10	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			240		Risk-based standard (ADEQ, 2013)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Fluorene

GPL (mg/kg) = 2824865.37

Saturation conc. (mg/kg) 498.30

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	
				Enter chemical properties	
Select chemical name from drop down list					Indeno(1,2,3-c,d)pyrene
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.0000119	0.0000119	Compound-specific value (ADEQ, 2013)
S (water solubility, mg/l)			0.00019	0.00019	Compound-specific value (ADEQ, 2013)
Koc (L/Kg)			31000000	31000000	Compound-specific value (ADEQ, 2013)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			0.25	0.25	Modified to capture peak liquid phase concentration
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			0.003	0.003	Risk-based standard (ADEQ, 2013)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Enter chemical properties

GPL (mg/kg) = #DIV/0!

Saturation conc. (mg/kg) 111.91

#DIV/0!

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	
Select chemical name from drop down list				Naphthalene	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.019803		Compound-specific value (ADEQ, 2013)
S (water solubility, mg/l)			31		Compound-specific value (ADEQ, 2013)
Koc (L/Kg)			1191		Compound-specific value (ADEQ, 2013)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
$Dg^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
$D1^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			20	20	Modified to capture peak liquid phase concentration
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			6.2		Risk-based standard (ADEQ, 2013)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Naphthalene

GPL (mg/kg) = 112.98

Saturation conc. (mg/kg) 703.59

GPL based upon risk based water quality standard

1/1/2013

Model Inputs

			Calculation values	Data Enter	
Select chemical name from drop down list				Pyrene	
Ct = Initial total soil contamination, ug/kg (ug/kg = (ug/l)/Pb)			1	1	
Kh (dimensionless)			0.000451		Compound-specific value (ADEQ, 2013)
S (water solubility, mg/l)			0.135		Compound-specific value (ADEQ, 2013)
Koc (L/Kg)			105000		Compound-specific value (ADEQ, 2013)
T1/2 (d) (vadose zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
T1/2 (d) (groundwater zone)	(enter 100,000 if no biodegradation, 1000 for BTEX)		100000	100000	Default for the GPL Model (ADEQ, 2013)
Select Soil Type from drop down list				New Soil Type	2019 Field Measurements
Φ(total porosity)		(minimum GPL default = .25)	0.25	0.25	Default for the GPL Model (ADEQ, 2013)
Pb (g/cm^3) (dry bulk density)		(minimum GPL default = 1.5	1.514	1.514	2019 Field Measurements
foc (vadose zone)		(minimum GPL default = .001)	0.019	0.019	2019 Field Measurements
foc (aquifer)			0.019	0.019	2019 Field Measurements
Dg$^{a\ (cm2/d)}$	(gaseous diffusion coefficient)	(7000 = default)	7000	7000	Default for the GPL Model (ADEQ, 2013)
D1$^{w(cm2/d)}$	(liquid diffusion coefficient)	(.7 = default)	0.7	0.7	Default for the GPL Model (ADEQ, 2013)
d(diffusion layer thickness,cm)		(.5 = default)	0.5	0.5	Default for the GPL Model (ADEQ, 2013)
θ (vol/vol)= moisture content		(minimum GPL default = .15)	0.099	0.099	2019 Field Measurements
Jw (water flux- cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)
time step (days) vary until output graphs shows complete curve, Jury 1 solution)			10	10	Default for the GPL Model (ADEQ, 2013)
L (cm)(depth of incorporation- Jury 1 solution)			807	807	Assume equal to depth of vadose zone
Z -cm(depth to water, or depth of interest, Jury 1 solution)			807	807	2019 Field Measurements
depth profile time (d), Jury 2 solution)			3650	3650	Default for the GPL Model (ADEQ, 2013)
total vadose zone depth (cm, Jury 2 solution)			807	807	2019 Field Measurements
Distance to compliance point (Sc) (meters)		(minimum GPL default = 30)	30	30	Default for the GPL Model (ADEQ, 2013)
Release width (w) (meters)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Well screen interval (s) (meters)		(minimum GPL default = 8.2)	8.2	8.2	Default for the GPL Model (ADEQ, 2013)
Water Quality Standard (ug/l)- see note regarding standard			180		Risk-based standard (ADEQ, 2013)
Groundwater velocity (cm/d) (actual velocity not Darcy velocity)		(minimum GPL default = 10)	10	10	Default for the GPL Model (ADEQ, 2013)
Infiltration rate outside of source area (cm/d)		(minimum GPL default = .007)	0.007	0.007	Default for the GPL Model (ADEQ, 2013)

Run GPL

Pyrene

GPL (mg/kg) = ###############

Saturation conc. (mg/kg) 269.33

GPL exceeds saturation, discuss with specific ADEQ Program

GPL based upon risk based water quality standard

Appendix M
Southwest Gas Corporation Excavation Guidelines

SOUTHWEST GAS CORPORATION

EXCAVATOR PRECAUTIONARY GUIDELINES

This information is to assist excavators in the proper identification of gas facilities, and precautions to be taken when working around gas facilities. The information provided here is not to be considered all-inclusive. All excavators digging within the vicinity of gas pipelines must protect the pipelines in accordance with the applicable One-Call law. The following are guidelines that will assist you in protecting the public, you, and the gas facilities.

If any gas pipelines are damaged, federal law requires that you call Southwest Gas Corporation (SWG). Additionally, if the damage results in the escape of gas, **you must call the Emergency Number 911.** ***Note: Damage includes damage to steel pipeline coatings, gouges in plastic pipe, damaged tracer wire, dents or scrapes in steel pipe, etc.***

Gas pipeline markers are used to alert the public that gas pipelines are buried in the general area. These markers may or may not be placed directly over the gas facility. When performing an excavation within 10' of a "High Pressure" marked facility, please contact SWG to arrange for stand by personnel to be present.

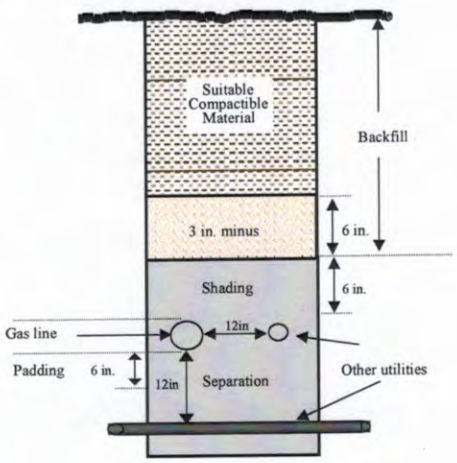
PLASTIC PIPELINES: Polyvinyl Chloride (PVC) pipe is one type of plastic pipe used in the SWG gas distribution system. PVC may be faint yellow, gray or white in color and range in size from ½" to 2" in diameter. PVC is not as flexible as the polyethylene (PE) pipe that SWG installs today. The integrity of PVC can be compromised if scratched or subjected to external loads and/or stresses. PE is another type of plastic pipe used in SWG's system. PE may be found in various colors and range in size from ½" to 8" in diameter. Although PE is a more flexible material, its integrity can be compromised if scratched or nicked. Many plastic gas pipelines are installed with a tracer wire in order to locate the facility. If a tracer wire is or has been severed or damaged, call SWG. We will repair the damaged wire at no charge.

STEEL PIPELINES: Steel gas pipelines, used in both SWG gas distribution and high pressure transmission systems, range in size from ½" to 24" in diameter and are also susceptible to damage. Dents and gouges in the steel will affect the integrity of the pipe, so precautionary measures must be taken during excavation. Steel pipelines are protected with an approved coating material that helps prevent deterioration of the pipe and can be found in various colors. If during excavation the coating is torn or damaged, contact SWG immediately to facilitate the repairs at no charge. *Call us before disturbing any mastic coating on active or abandoned steel pipe. The coating is likely to contain regulated asbestos fibers that can be harmful to your employees.*

Typically, most gas pipes have specific identification markings on them or on the coating. Care should be taken to support and protect all gas pipelines, as required by law, when exposed or crossed during excavation activities. Additionally, care must be taken while exposing existing facilities as they may or may not have padding and shading surrounding them as outlined below. **If any gas pipeline is damaged, call SWG immediately to facilitate the proper pipeline repairs.** When excavations have been completed, gas pipelines must be properly padded, shaded, and backfilled per SWG standards, as shown in the drawing below. SWG specifications for padding and shading material call for it to be able to sift through a 3/8" screen, and be smooth and relatively rock free. Excavations must be compacted to meet the requirements of local authorities. During backfill activities it is very important to compact the soil beneath the gas pipe in order to properly support it. Also it is important to avoid mechanically compacting the soil directly over the gas pipe to eliminate any unnecessary external stresses. Steps must be taken during this process to protect the gas pipeline from excessive external loadings. If other utilities or substructures are to be installed in the same excavation as a gas pipeline, the proper clearances shown in the drawing must be maintained.

If at any time during excavation activities you smell gas, call SWG and 911.

- **DO NOT** attempt to control or stop the flow of natural gas, or make repairs.
- **DO NOT** turn on, turn off, or attempt to move or operate equipment near the line break or point of leakage.
- **DO NOT** enter the area where the natural gas is escaping.
- **DO NOT** allow others to enter the area.
- **DO NOT** leave the scene of the incident until assistance has arrived.
- **DO** secure the area and prevent others from entering.
- **DO** eliminate sources of ignition, such as sparks or flames, near the gaseous atmosphere.



For more information on the types of gas pipe used by SWG, positive identification of gas facilities, or if you have any questions, please contact the SWG office nearest you. Additional information on natural gas safety is included in our Material Safety Data Sheet (MSDS) located at www.swgas.com/emergencysafety .

SWG Contact Number: ( )

Please forward to the appropriate excavator.

SOUTHWEST GAS CORPORATION STANDBY CHECKLIST

Use this form whenever notification of a standby has been received to document that the appropriate safety information has been provided to the excavator.

Company Name:	Date:
One-Call Ticket #(s):	

	Review the following responsibilities with the excavator.
☐	Hand dig within 24-inches of SWG facilities. Vacuum excavation is acceptable. California excavators are required to get facility owner authorization when using vacuum excavation to pothole.
☐	Verify the One-Call ticket request is valid.
☐	Provide the Form 284.0 Gas Pipe Identification pamphlet. Provide Form 279.0 Excavator Precautionary Guidelines, and review with the excavator when PVC is present.
	HIGH PRESSURE STANDBY
☐	Implement the standby when excavation is within 5-feet of high pressure facilities.
☐	Positively identify gas facilities prior to the excavation.
☐	Exposed facilities must be protected and supported.
☐	Avoid pulling excavation material towards the gas facility. Pull material away from the facility whenever possible.
☐	If the facility's coating is damaged, qualified personnel will follow the appropriate Corrosion Control Procedure.
☐	When the excavation has extended 5-feet from the facility, the standby may be concluded.
	BORE STANDBY
☐	Implement the standby when boring across or parallel within 5-feet of gas facilities.
☐	Positively identify gas facilities prior to the bore operation.
☐	Inspect the boring operation while in progress until there is no longer a threat to the facility.
☐	**Boring Across Gas Facilities**
☐	Prior to boring across within 24-inches, expose the full circumference of the facility (see procedure).
☐	Pothole must be deep enough to see the bore bit and reamer.
☐	Maintain a minimum of 12-inches of separation between the bore bit and reamer.
☐	Less than 12-inches of separation requires approval from Southwest Gas.
☐	Gas facilities deeper than the proposed bore path require an additional pothole of 24-inches to ensure adequate separation (see procedure).
☐	Measure distance between gas facility and bore bit and reamer to determine adequate separation.
☐	If bore bit has not reached predetermined distance, request the operation to stop to inspect gas facilities.
☐	Leave the inspection pothole open during bore crossings. Verify the bore crossing occurred as expected, or visually inspect SWG facilities during the boring operation to ensure that no damage occurs.
☐	Electronically measure depth of bore bit and reamer to ensure adequate separation before & after crossing.
☐	**Boring Parallel to Gas Facilities**
☐	Request the excavator to perform inspection potholes of the gas facility at appropriate increments.
☐	Gas facilities deeper than the proposed bore path require an additional pothole of 12-inches to ensure adequate separation.
☐	Monitor the bore path to ensure adequate separation is maintained from SWG facilities.
☐	After the excavation has been extended 5-feet from the facility, the standby may be concluded.

Excavator Name (*Print*):	Contact #:
Signature:	Date Signed:
Comments:	
Southwest Gas Corporation Name (*Print*):	
Signature:	Date Reviewed:

Appendix N
ADEQ 2001 Letter regarding MGP Remediation Waste

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Jane Dee Hull
Governor

3033 North Central Avenue • Phoenix, Arizona 85012-2809
(602) 207-2300 • www.adeq.state.az.us

Jacqueline E. Schafer
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

April 16, 2001
REF: HWICU01-0092

Barbara Davis Lockwood, P.E.,
Pinnacle West
400 North Fifth Street
Post Office Box 53999
Phoenix, Arizona 85072-3999

RE: Manufactured Gas Plant (MGP) Remediation Wastes

Dear Ms. Lockwood:

This letter is in response to your inquiry letter of March 12, 2001, to the Arizona Department of Environmental Quality (ADEQ), regarding the State's adoption of the federal judgement concerning manufactured gas plant (MGP) remediation wastes.

Research of available literature and discussions with US EPA Region 9 with respect to MGP remediation wastes yield these findings;

1. In a case decided April 21, 2000 by the District of Columbia Court of Appeals, the requirement to use the TCLP for evaluating MGP waste was vacated.
2. Guidance from the US EPA point of view further clarifies this issue. MGP wastes are not subject to TCLP testing if the only hazardous characteristic is toxicity. Wastes that exhibit other characteristics or that are listed would still be required to be handled as RCRA wastes.

Provided a waste determination is completed for each site and the MGP wastes do not exhibit other hazardous waste characteristics or are not listed as specified in 40 CFR §261 Subpart C and D, ADEQ concurs with the conclusion that TCLP is not required for MGP remediation wastes.

If you have any questions regarding this letter, please contact me at (602) 207-4105.

Sincerely,

Laura Malone

Laura Malone, Manager
Hazardous Waste Inspections and Compliance Unit

PINNACLE WEST
CAPITAL CORPORATION

Mail Station: 8376
Tel. 602-250-3361
Fax 602-250-3872
e-mail:Barbara.Lockwood@pinnaclewest.com

Name: Barbara Davis Lockwood, P.E.
Title: Environmental Consultant
Department: Environmental, Health and Safety

March 12, 2001

Ms. Laura Malone
Manager, Hazardous Waste Inspections & Compliance Unit
Hazardous Waste Section
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Manufactured Gas Plant (MGP) Remediation Wastes

Dear Ms. Malone:

Arizona Public Service Company (APS) has eight (8) MGP sites throughout Arizona. APS and its parent company, Pinnacle West Capital Corporation (PWCC), have been working through the Arizona Department of Environmental Quality's (ADEQ's) voluntary remediation program (VRP) to clean up five (5) of those sites. APS and PWCC recently completed, in Prescott, Arizona, what is expected to be their largest MGP remediation project, and the remaining sites are scheduled for remediation in the next few years.

At each of these MGP sites, there is the potential to encounter soils and/or tar-like material that tests hazardous for benzene and/or lead under the toxicity characteristic leaching procedure (TCLP). At the Prescott site, most of the soil generated that exceeded the TCLP limits was managed under the area of contamination (AOC) policy, as approved by ADEQ last year.[1] However, MGP wastes that exceeded the TCLP limits that could not be managed using the AOC policy were stored, transported, and disposed as hazardous waste.

In April of last year, the United States Court of Appeals for the District of Columbia Circuit vacated the use of the TCLP for the purpose of determining whether MGP wastes exhibit the characteristic of toxicity under the federal hazardous waste program. *See Association of Battery Recyclers, Inc. v. EPA*, 208 F.3d 1047 (D.C. Cir. April 21, 2000). Since MGP wastes are not listed under the federal program, MGP wastes are no longer considered hazardous under the federal program unless they exhibit the characteristics of ignitability, corrosivity, or reactivity.

[1] See letter dated March 16, 2000 from Alan Roesler, ADEQ, to Judy Heywood, PWCC, and ADEQ Interoffice Memorandum dated March 15, 2000 from Greg Workman, ADEQ, to Alan Roesler, ADEQ).

APS Energy Services and APS are subsidiaries of Pinnacle West Capital Corporation; however, APS Energy Services is not the same company as APS. You do not have to be an APS Energy Services customer to receive quality regulated services from APS.

A.R.S. § 49-922.A. provides that ADEQ may not adopt standards that are more stringent than or that conflict with federal hazardous waste standards or identify wastes as hazardous that are not hazardous under the federal hazardous waste program. Because the TCLP may no longer be used to determine whether MGP wastes are hazardous under the federal program, and because ADEQ may not impose standards that are more stringent than or in conflict with the federal program, we believe that the TCLP is no longer applicable to MGP wastes in Arizona. Therefore, MGP wastes should not be considered hazardous wastes in Arizona unless they meet other state hazardous waste criteria. We request ADEQ's written concurrence.

From a practical perspective, APS and PWCC plan to continue to send any MGP wastes that exceed the TCLP to hazardous waste treatment, storage and/or disposal facilities. The treatment and disposal methods that APS and PWCC use for non-hazardous MGP wastes are not well suited to handle higher levels of contaminants, and we believe that TSDs are the safest and most appropriate facilities to manage any MGP wastes exceeding the TCLP limits. However, we do not anticipate labeling, manifesting, or reporting this material as hazardous waste. Of course, MGP wastes will still be subject to Arizona Special Waste requirements if they qualify as "petroleum contaminated soils."

We would be available to meet with you if you would like to discuss this issue further. If you have any questions, please contact me at (602) 250-3361.

Sincerely,

Barbara Lockwood

Barbara Davis Lockwood, P.E.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
NOV 13 2000

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

Subject: Implementation of Vacature of TCLP Use for Evaluating Manufactured Gas Plant (MGP) Wastes in the *Battery Recyclers* Case

From: Elizabeth Cotsworth
Director, Office of Solid Waste

To: RCRA Senior Policy Advisors,
RCRA/Waste Enforcement Program Managers
Regions I-X

This memo is to notify you that the D. C. Court of Appeals, ruling in the case: Association of Battery Recyclers, Inc. et al. v. U.S. Environmental Protection Agency (decided April 21, 2000), vacated the use of the Toxicity Characteristic Leaching Procedure (TCLP) for evaluating manufactured gas plant (MGP) wastes.

In the *Battery Recyclers* case, several aspects of the Agency's Phase IV Land Disposal Restrictions (LDR) final regulations (63 FR 28556, May 26, 1998) were challenged. Among the issues addressed in the Phase IV final regulation was the Agency's earlier court remand in *Edison Electric Institute v. EPA* 2F.3rd 438 (D.C. Circuit, 1993), regarding application of the TCLP to evaluating whether mineral processing and MGP wastes are hazardous wastes. In *Edison Electric*, the plaintiffs challenged application of TCLP to their waste on the argument that the waste is not managed in MSW landfills, as presumed by the TCLP mismanagement scenario. The court held that the information in the record at the time was insufficient to show a rational relationship between the TCLP and a likely mismanagement scenario for mineral processing wastes. The Court's remand required that the Agency provide some factual support that the TCLP mismanagement scenario is plausible for mineral processing and MGP waste. The Phase IV proposal and final rule responded to the Court's remand by providing the required factual support. In the *Battery Recyclers* case, the affected industries challenged the adequacy of EPA's response to the *Edison Electric* remand.

In ruling in the *Battery Recyclers* case, the court found that EPA produced insufficient evidence that MSW disposal of MGP waste has happened or is likely to happen. The Court concluded that "...the EPA has not justified its application of the TCLP to MGP waste" and consequently ruled to "...vacate the Phase IV rule insofar as it provides for the use of TCLP to determine whether MGP waste exhibits the characteristic of toxicity."

Since the court decision, we have received several inquiries concerning the implications of this decision for MGP cleanups. In a recent response to a letter from Vectren Corporation, an Indiana utility company owning a number of MGP sites, Michael Shapiro, Principal Deputy Assistant Administrator for Solid Waste and Emergency Response, provided EPA's view on this question. As the response states, under the Court's ruling, MGP waste cannot be classified as Toxicity Characteristic (TC) hazardous, since the TCLP test is part of the TC regulatory definition. Also, because MGP wastes are unlikely to exhibit any of the other hazardous characteristics, they are unlikely to be classified as hazardous under the federal program. As a practical matter, this means that individual MGP cleanups will probably not be regulated under federal RCRA Subtitle C.

For your information, I have attached a copy of Mr. Shapiro's letter to Vectren. Also, I call your attention to the preamble to the proposed Corrective Action Management Unit (CAMU) Rule, which makes the same point on the Battery Recycling decision and MGP wastes (See 65 FR 51087, footnote 6, August 22, 2000).

Of course, as you know, states may have regulations that are broader in scope than the federal regulations, and they may regulate MGP wastes as hazardous under their own state requirements. Also, many states regulate MGP cleanups under independent state cleanup programs, and state industrial waste requirements may also apply. Therefore, we are encouraging utilities and other parties conducting MGP cleanups to consult with the appropriate state regulatory authorities.

If Regional Office staff have any questions about TCLP or waste classification they may contact Greg Helms at 703-308-8845, or for questions on corrective action issues, Mike Fitzpatrick, at 703-308-8411.

Attachment

cc: RCRA Key Contacts, Regions I-X